LIBRA JOURNAL CLUB
7-15 MAY 2023

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.
ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.
OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

(copd OR "Pulmonary Disease, Chronic Obstructive"[Mesh])

1
NPJ Prim Care Respir Med
.
. 2023 May 13;33(1):20.
doi: 10.1038/s41533-023-00342-x.

Cognitive decline and risk of dementia in older adults after diagnosis of chronic obstructive pulmonary disease

Aldana Rosso[1], Tomas Månsson[2], Karl Egervall[2], Sölve Elmståhl[2], Marieclaire Overton[2]
Affiliations expand

- PMID: 37179395

- DOI: 10.1038/s41533-023-00342-x

Abstract

Cognitive screening has been proposed for older adults diagnosed with chronic obstructive pulmonary disease (COPD). Therefore, we examined the change over time in

cognitive function and the risk of incident dementia in older adults after COPD diagnosis. A sample of 3,982 participants from the population-based cohort study Good Aging in Skåne was followed for 19 years, and 317 incident COPD cases were identified. The cognitive domains of episodic memory, executive function, and language were assessed using neuropsychological tests. Mixed models for repeated measures and a Cox model were implemented. Participants performed, on average, worse over time on all neuropsychological tests after COPD diagnosis in comparison to those without COPD, although statistical significance differences were only observed for episodic memory and language. The groups had a comparable risk of developing dementia. In conclusion, our results indicate that cognitive screening in the early stages of COPD may be of limited clinical relevance.

- 34 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

2

Lancet

-
-
-

. 2023 May 13;401(10388):1570.
doi: 10.1016/S0140-6736(23)00554-8.

The Lancet COPD Commission: broader questions remain – Authors' reply

Mark T Dransfield[1], Daiana Stolz[2]
Affiliations expand

- PMID: 37179115

- DOI: 10.1016/S0140-6736(23)00554-8

No abstract available

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

3
Lancet
.
. 2023 May 13;401(10388):1569-1570.
doi: 10.1016/S0140-6736(23)00556-1.

The Lancet COPD Commission: broader questions remain

Nayia Petousi[1], Ian D Pavord[2], Simon Couillard[3]
Affiliations expand

- PMID: 37179114

- DOI: 10.1016/S0140-6736(23)00556-1

No abstract available

SUPPLEMENTARY INFO

Publication typesexpand

Lancet

. 2023 May 13;401(10388):1568.

doi: 10.1016/S0140-6736(23)00553-6.

The Lancet COPD Commission: broader questions remain

Paulo Crp Corrêa[1]

Affiliations expand

- PMID: 37179113

- DOI: 10.1016/S0140-6736(23)00553-6

No abstract available

. 2023 May 13;401(10388):1568-1569.
doi: 10.1016/S0140-6736(23)00555-X.

The Lancet COPD Commission: broader questions remain

Jordan A Guenette[1], Kathryn M Milne[2], Denis E O'Donnell[3]
Affiliations expand

- PMID: 37179112

- DOI: 10.1016/S0140-6736(23)00555-X

No abstract available

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Editorial

J Clin Med

. 2023 May 7;12(9):3322.
doi: 10.3390/jcm12093322.

Inhaled Corticosteroids and Bronchiectasis: Friend or Foe?

Miguel Angel Martinez-Garcia[1][2][3]
Affiliations expand

- PMID: 37176763

- DOI: 10.3390/jcm12093322

Abstract

The three most common chronic inflammatory airway diseases are asthma, chronic obstructive pulmonary disease (COPD), and bronchiectasis [...].

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

BMC Pulm Med

-
-
-

. 2023 May 12;23(1):163.
doi: 10.1186/s12890-023-02438-z.

Butyrate inhibits iILC2-mediated lung inflammation via lung-gut axis in

chronic obstructive pulmonary disease (COPD)

Min Jiang[#1,2], Zhiwei Li[#3], Fengbo Zhang[4], Zheng Li[2], Dan Xu[2], Jing Jing[2], Fengsen Li[2], Jing Wang[5], Jianbing Ding[6]
Affiliations expand

- PMID: 37173731

- DOI: 10.1186/s12890-023-02438-z

Abstract

Background: The study investigated the effects and underlying mechanisms of intestinal flora metabolite butyrate on inflammatory ILC2 cells (iILC2s)-mediated lung inflammation in chronic obstructive pulmonary disease (COPD).

Methods: Mouse models of COPD and acute exacerbation of COPD (AECOPD) were established. Flow cytometry was used to detect natural ILC2 cells (nILC2s) and iILC2s in lung and colon tissues. The 16s rRNA and GC-MS were used to detect microbial flora and short chain fatty acids (SCFAs) in feces. ELISA was used to detect IL-13 and IL-4. Western blot and qRT-PCR were used to detect the relative protein and mRNA levels, respectively. In vitro experiments were performed with sorted ILC2s from colon tissues of control mice. Mice with AECOPD were treated with butyrate.

Results: The nILC2s and iILC2s in lung and colon tissues of AECOPD mice were significantly higher than control groups. The abundance of the flora Clostridiaceae was significantly reduced, and the content of SCFAs, including acetate and butyrate, was significantly reduced. The in vitro experiments showed that butyrate inhibited iILC2 cell phenotype and cytokine secretion. Butyrate treatment reduced the proportion of iILC2 cells in the colon and lung tissues of mice with AECOPD.

Conclusions: The nILC2s and iILC2s in the colon tissues are involved in the course of COPD. Decreased Clostridiaceae and butyrate in AECOPD mice caused the accumulation of iILC2 cells in the intestines and lungs. Supplementation of butyrate can reduce iILC2 in the intestine and lung tissues. Our data may provide new ideas for prevention and treatment of COPD.

Keywords: Acute exacerbation of COPD (AECOPD); Butyrate; Chronic obstructive pulmonary disease (COPD); Inflammatory ILC2s; Short chain fatty acids (SCFAs).

- 49 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

8
BMC Pulm Med
. 2023 May 12;23(1):164.
doi: 10.1186/s12890-023-02454-z.

Prevalence and clinical impact of frailty in COPD: a systematic review and meta-analysis

Lina Wang[#1], Xiaolin Zhang[#1], Xinmin Liu[2]
Affiliations expand

- PMID: 37173728

- DOI: 10.1186/s12890-023-02454-z

Abstract

Background: Frailty has been increasingly identified as a risk factor of adverse outcomes in chronic obstructive pulmonary disease (COPD). The prevalence and impact of frailty on health outcomes in people with COPD require clarification.

Methods: PubMed, Embase, The Cochrane Library and Web of Science (January 1, 2002, to July 1, 2022) were comprehensively searched to identify studies related to frailty and COPD. Comparisons were made between people who did and did not have frailty for pulmonary function, dyspnea severity, 6-minute walking distance, activities of daily life, and mortality.

Results: Twenty studies (9 cross-sectional, 10 cohort studies,1 clinical trial) from Europe (9), Asia (6), and North and South America (4), Oceania (1) involving 11, 620 participants were included. The prevalence of frailty was 32.07% (95% confidence interval (CI) 26.64-37.49) with a range of 6.43-71.70% based on the frailty tool used. People with frailty had lower predicted forced expiratory volume in the first second (mean difference - 5.06%; 95%CI -6.70 to -3.42%), shorter 6-minute walking distance (mean difference - 90.23 m; 95%CI -124.70 to -55.76), poorer activities of daily life (standardized mean difference - 0.99; 95%CI -1.35 to -0.62), higher CAT(COPD Assessment Test) score(mean difference 6.2; 95%CI 4.43 to 7.96) and mMRC (modified Medical Research Council) grade (mean difference 0.93; 95%CI 0.85 to 1.02) compared with those who did not ($P < 0.001$ for all). Meta-analysis showed that frailty was associated with an increased risk of long-term all-cause mortality (HR 1.68; 95% CI 1.37-2.05; $I^2 = 0\%$, $P < 0.001$).

Conclusion: Frailty is prevalent in people with COPD and linked with negative clinical outcomes including pulmonary function, dyspnea severity, exercise capacity, quality of life and mortality.

Keywords: Chronic obstructive pulmonary disease; Frailty; Mortality; Prevalence; meta-analysis.

- 47 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

. 2023 May 11.
doi: 10.1164/rccm.202304-0783ED. Online ahead of print.

Is One Exacerbation Enough to Modify Therapy in COPD?

David M Mannino[1,2]
Affiliations expand

- PMID: 37167624

- DOI: 10.1164/rccm.202304-0783ED

No abstract available

Keywords: COPD; Exacerbation.

10

Am J Respir Crit Care Med

. 2023 May 11.
doi: 10.1164/rccm.202303-0550ED. Online ahead of print.

From Laennec's Stethoscope to the Magic of Imaging, Big Data and Artificial Intelligence: A Timeline of

Precision Medicine for Patients with COPD

Bartolome Celli[1,2]
Affiliations expand

- PMID: 37167548

- DOI: 10.1164/rccm.202303-0550ED

No abstract available

Keywords: COPD, Emphysema, Bronchitis, History of advances in lung diseases.

11

Am J Epidemiol

. 2023 May 9;kwad114.
doi: 10.1093/aje/kwad114. Online ahead of print.

COPD Heterogeneity and Progression: Emphysema-Predominant and Non-Emphysema-Predominant Disease

Peter J Castaldi[1,2], Zhonghui Xu[1], Kendra A Young[1], John E Hokanson[3], David A Lynch[4], Stephen M Humphries[1], James C Ross[5], Michael H Cho[1,6], Craig P Hersh[1,6], James D Crapo[7], Matthew Strand[8], Edwin K Silverman[1,6]
Affiliations expand

- PMID: 37160347

- DOI: 10.1093/aje/kwad114

Abstract

While variation in emphysema between COPD patients is well-recognized, clinically applicable definitions of emphysema-predominant (EPD) and non-emphysema-predominant (NEPD) subtypes have not been established. To study the clinical relevance of EPD and NEPD subtypes, we tested the association of these subtypes to prospective FEV1 decline and mortality in 3,427 subjects with GOLD spirometric grade 2-4 COPD at baseline in the COPDGene Study, an ongoing national multicenter study that started in 2007. NEPD was defined as airflow obstruction with <5% computed tomography (CT) quantitative densitometric emphysema at -950 Hounsfield units, and EPD was defined as airflow obstruction with >=10% CT emphysema. Mixed effects models for FEV1 demonstrated larger average annual FEV1 loss in EPD versus NEPD subjects (-10.2 ml/yr, p<0.001), and subtype-specific associations to FEV1 decline were identified. Cox proportional hazards models showed higher risk of mortality in EPD versus NEPD (HR 1.46, p<0.001). To determine whether the NEPD and EPD dichotomy is captured by previously described COPDGene subtypes, we used logistic regression and receiver-operator characteristic analysis to predict NEPD/EPD membership using these previous subtype definitions, which generally showed excellent discrimination with AUCs > 0.9. NEPD and EPD COPD subtypes capture important aspects of COPD heterogeneity and are associated with different rates of disease progression and mortality.

Keywords: COPD; COPD subtypes; Emphysema.

. 2023 May 8.
doi: 10.2174/1573405620666230508103841. Online ahead of print.

Computer Tomography (CT)-based Screening of Hospitalized Patients with Moderate to Severe Chronic Obstructive Pulmonary Disease Complicated by Bronchiectasis Phenotype During Acute Exacerbation: A Clinical Analysis

Jingmei Zhao[1], Yiping Wu[1], Kai Zhang[2], Hongfeng Zhang[1], Hongbo Ren[1], Yonghong Wang[1]
Affiliations expand

- PMID: 37157216

- DOI: 10.2174/1573405620666230508103841

Abstract

Background: In the past, many experts considered chronic obstructive pulmonary disease (COPD) and bronchiectasis to be separate, chronic respiratory diseases. Nonetheless, the widespread use of high-resolution lung computed tomography (CT) has led to the discovery that these diseases can occur alone or together.

Aim: The current study aimed to compare the effects of nutritional status on the clinical outcomes in moderate to severe COPD patients with bronchiectasis.

Objective: This study identifies the nutritional risk in hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during acute exacerbation screened using computer tomography (CT). Also, determines its correlation with disease progression.

Materials and methods: NRS 2002 (Nutrition Risk Screening Evaluation Tool) was used to determine and evaluate the nutritional risk status in 182 hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during an acute exacerbation. Selected patients were divided into the nutritional risk (NR) group and the

non-nutritional risk (NNR) group according to their nutritional status determined by NRS 2002. The body mass index (BMI), serum albumin (ALB), pre albumin (PAB), lymphocyte count (TLC), FEV1/FVC, FEV1% predicted, PEF% predicted, blood gas analysis, number of acute exacerbations in the past year, number of respiratory failure cases, number of anti-infection days, and length of hospitalization of the two groups were observed.

Results: The hospitalized patients in acute exacerbation of moderate to severe COPD complicated by bronchiectasis phenotype had a nutritional risk of 62.64%. BMI, ALB, PAB, TLC, FEV1% predicted, FEV1/FVC, PEF% predicted, blood gas analysis, number of acute exacerbations in the past year, number of respiratory failure cases, number of anti-infection days, and length of hospitalization were statistically significantly different between the NR group and NNR group ($P<0.05$).

Conclusion: Hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during acute exacerbation are often associated with nutritional risk. An increase in nutritional risk reduces the level of pulmonary function of the patient and elevates the risk for repeated acute exacerbations, which predispose the patient to respiratory failure, thereby increasing the length of hospitalization. Therefore, the nutritional risk status of COPD patients with bronchiectasis was closely related to the occurrence, development, and prognosis of the disease.

Keywords: Computer tomography (CT); acute exacerbation; chronic obstructive pulmonary disease; nutritional risk screening.

Eur Respir J

. 2023 May 11;61(5):2202469.
doi: 10.1183/13993003.02469-2022. Print 2023 May.

Air pollution and COPD: GOLD 2023 committee report

Don D Sin [1], Dany Doiron [2], Alvar Agusti [3], Antonio Anzueto [4], Peter J Barnes [5], Bartolome R Celli [6], Gerard J Criner [7], David Halpin [8], MeiLan K Han [9], Fernando J Martinez [10], Maria Montes de Oca [11], Alberto Papi [12], Ian Pavord [13], Nicolas Roche [14], Dave Singh [15], Robert Stockley [16], M Victorina Lopez Varlera [17], Jadwiga Wedzicha [5], Claus Vogelmeier [18], Jean Bourbeau [2]; GOLD Scientific Committee
Affiliations expand

- PMID: 36958741

- DOI: 10.1183/13993003.02469-2022

Abstract

Exposure to air pollution is a major contributor to the pathogenesis of COPD worldwide. Indeed, most recent estimates suggest that 50% of the total attributable risk of COPD may be related to air pollution. In response, the Global Initiative for Chronic Obstructive Lung Disease (GOLD) Scientific Committee performed a comprehensive review on this topic, qualitatively synthesised the evidence to date and proffered recommendations to mitigate the risk. The review found that both gaseous and particulate components of air pollution are likely contributors to COPD. There are no absolutely safe levels of ambient air pollution and the relationship between air pollution levels and respiratory events is supra-linear. Wildfires and extreme weather events such as heat waves, which are becoming more common owing to climate change, are major threats to COPD patients and acutely increase their risk of morbidity and mortality. Exposure to air pollution also impairs lung growth in children and as such may lead to developmental COPD. GOLD recommends strong public health policies around the world to reduce ambient air pollution and for implementation of public warning systems and advisories, including where possible the use of personalised apps, to alert patients when ambient air pollution levels exceed acceptable minimal thresholds. When household particulate content exceeds acceptable thresholds, patients should consider using air cleaners and filters where feasible. Air pollution is a major health threat to patients living with COPD and actions are urgently required to reduce the morbidity and mortality related to poor air quality around the world.

Conflict of interest statement

Conflict of interest: There was no external funding for the submitted work. D.D. Sin reports receipt of honorarium from AstraZeneca, GlaxoSmithKline and Boehringer Ingelheim for giving talks on COPD, and participation on an advisory board for an NHLBI-sponsored trial. A. Agusti reports grants from AstraZeneca, GlaxoSmithKline, Menarini, Sanofi and Chiesi, and receipt of consulting fees and honoraria for presentations from AstraZeneca, GlaxoSmithKline, Chiesi, Menarini, Sanofi and Zambon. F.J. Martinez reports grants from AstraZeneca, Chiesi, GlaxoSmithKline and Sanofi/Regeneron, receipt of consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Bering, GlaxoSmithKline, Novartis, Polarean, Pulmonx, Sanofi, Regeneron, Sunovion, Teva, Theravance and UptoDate, honoraria for presentations from AstraZeneca and GlaxoSmithKline, and advisory board participation with MedTronic and GlaxoSmithKline. A. Anzueto reports receipt of consulting fees from GlaxoSmithKline, AstraZeneca, Boehringer Ingelheim and Viatix/Theravance. B.R. Celli reports receipt of consulting fees from GlaxoSmithKline, AstraZeneca, Axios, Menarini and Sanofi, honoraria for presentations from GlaxoSmithKline, AstraZeneca, Menarini, Chiesi and Regeneron, travel support from GlaxoSmithKline and Sanofi, and advisory board participation for AstraZeneca Therapeutics, Sanofi Aventis and Vertx. D. Halpin reports receipt of honoraria for presentations from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Pfizer, Sanofi, Berlin-Chemie and Menarini, travel support from Menarini, and advisory board participation with Chiesi, GlaxoSmithKline and Inogen. M.K. Han reports grants from the NIH, Sanofi, Novartis, Nuvaira, Sunovion, Gala Therapeutics, COPD Foundation, AstraZeneca, American Lung Association, Boehringer Ingelheim and Biodesix, consulting fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Pulmonox, Teva, Verona, Merck, Mylan, Sanofi, DevPro, Aerogen, Polarian, United Therapeutics, Regeneron, Altesa Biopharma and Amgen, honoraria for presentations from Cipla, Chiesi, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Medscape, Integrity and NACE, royalties from UptoDate, Norton Publishing and Penguin Random House, advisory board membership for Novartis and Medtronic, leadership roles with the COPD Foundation (board), COPD Foundation (scientific advisory committee), ALA (advisory committee), American Thoracic Society (journal editor), ALA (volunteer spokesperson), GOLD (scientific committee) and Emerson School Board, Ann Arbor, MI, stock or stock options from Meissa Vaccines and Altesa BioPharma, writing support from GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca and Novartis, and other personal fees from Medscape and Integrity. A. Papi reports grants from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi and Agenzia Italiana del Farmaco (AIFA), receipt of consulting fees from Chiesi, AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, Avillion and Elpen Pharmaceuticals, honoraria for presentations from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Novartis, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, Avillion and Elpen Pharmaceuticals, and advisory board participation for Chiesi, AstraZeneca, GlaxoSmithKline, MSD, Novartis, Sanofi, Iqvia, Avillion and Elpen Pharmaceuticals. I. Pavord reports grants from Chiesi, receipt of consulting fees from Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Regeneron, Sanofi, Teva, Circassia, Dey Pharma, Genentech, Knopp Biosciences, Merck, MSD, Napp Pharmaceuticals, RespiVert and Schering-Plough, and honoraria for presentations from Aerocrine BB, Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi,

GlaxoSmithKline, Novartis, Regeneron, Sanofi and Teva. N. Roche reports grants from Boehringer Ingelheim, Novartis, GlaxoSmithKline and Pfizer, receipt of consulting fees from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Sanofi, Chiesi, Pfizer, Novartis, Teva and Bayer, and honoraria for presentations from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Sanofi, Chiesi, Pfizer, Novartis, Teva, Zambon and MSD. D. Singh reports receipt of consulting fees from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Bering, Epiendo, Genentech, GlaxoSmithKline, Glenmark, Gossamerbio, Kinaset, Menarini, Novartis, Pulmatrix, Sanofi, Synairgen, Teva, Theravance and Verona, outside of the submitted work. R. Stockley reports receipt of consulting fees from Vertex, CSL Bering and Mereo Biopharma, and data safety monitoring board participation with Syneos. J. Wedzicha reports grants from AstraZeneca, Boehringer, Chiesi, GlaxoSmithKline, Novartis, Genentech and 37Clinical, receipt of consulting fees from AstraZeneca, Epiendo, GlaxoSmithKline, Gilead, Novartis, Pieris and Pulmatrix, honoraria for presentations from AstraZeneca, GlaxoSmithKline, Boehringer Ingelheim, Recipharm and Novartis, and data safety monitoring board participation with Virtus. C. Vogelmeier reports grants from AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Grifols and, Novartis, and personal fees from AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Grifols, Menarini, Novartis, Nuvaira, MedUpdate, Aerogen, Roche, Sanofi and Insmed, outside of the submitted work. J. Bourbeau reports grants from the Canadian Institute of Heath Research (CIHR), Réseau en santé respiratoire du FRQS, McGill University, McGill University Health Centre Foundation, AstraZeneca Canada Ltd, Boehringer Ingelheim Canada Ltd, GlaxoSmithKline Canada Ltd, Grifols, Novartis, Sanofi and Trudell Canada Ltd, and receipt of honoraria from AstraZeneca, GlaxoSmithKline, Boehringer Ingelheim, Pfizer, Trudell and COVIS Pharma for presentations, outside of the submitted work. The remaining authors disclose no potential conflicts of interest.

"Multimorbidity"[Mesh Terms] OR Multimorbidity[Text Word]

1
Basic Clin Pharmacol Toxicol

. 2023 May 13.
doi: 10.1111/bcpt.13899. Online ahead of print.

Deprescribing in a multimorbid older adult: a case vignette study among community pharmacists and primary care physicians

Bužančić Iva[1,2], Ortner-Hadžiabdić Maja[2]
Affiliations expand

- PMID: 37177977

- DOI: 10.1111/bcpt.13899

Abstract

Collaborative deprescribing can include pharmacists' medication review with identification and suggestion of potential deprescribing targets to physicians. Case-vignettes can be a valuable method for researching variations in clinical decision making, especially in settings unaccustomed to newer clinical approaches such as deprescribing. This study aimed to explore if pharmacists can identify deprescribing targets and if physicians would accept pharmacist's deprescribing rationales. A cross-sectional study was performed using an online case-vignette based on a real-life elderly patient. Pharmacists were asked to indicate which medicines they would recommend deprescribing, alongside a rationale. Physicians were asked to state their acceptance of the proposed pharmacist's deprescribing suggestion. Pharmacists gave 1275 deprescribing rationales and most were given for deprescribing opioids, NSAID, and diuretics. Physicians would accept rationales to deprescribe a median of ten medicines, while pharmacist would recommend deprescribing a median of six medicines. Most difference lays in deprescribing of preventative medicines. Healthcare providers share agreement on deprescribing targets, but pharmacists show hesitancies in making recommendations that could hamper potential collaboration. Action is needed to improve pharmacists' skills in recognising deprescribing targets and confidence in making suggestions, which could lead to opening of possibilities for joint patient care.

Keywords: case-vignette; deprescribing; multimorbidity; polypharmacy; primary care.

J Gerontol A Biol Sci Med Sci
.
. 2023 May 12;glad125.
doi: 10.1093/gerona/glad125. Online ahead of print.

Frailty, an Independent Risk Factor in Progression Trajectory of Cardiometabolic Multimorbidity: A Prospective Study of UK Biobank

Tianqi Ma[1,2], Lingfang He[1,2], Yi Luo[1,2], Dihan Fu[1,2], Jiaqi Huang[3], Guogang Zhang[4], Xunjie Cheng[1,2], Yongping Bai[1,2]
Affiliations expand

- PMID: 37170845

- DOI: 10.1093/gerona/glad125

Abstract

Background: Although frailty was associated with cardiometabolic diseases (CMDs, including coronary heart disease, stroke, and diabetes here), there was no systematic analyses estimating its role in incidence, progression, and prognosis of cardiometabolic multimorbidity (CMM).

Methods: We included 351,205 participants without CMDs at baseline in UK Biobank. Occurrences of first CMD, CMM, and death were recorded. We used multi-state models to assess transition-specific role of baseline frailty measured by frailty phenotype and frailty index in CMM progression trajectory from no disease to single CMD, CMM, and death. Association between changes in frailty and outcomes was investigated among 17,264 participants.

Results: Among 351,205 participants (44.0% male, mean age 56.55 years), 8,190 (2.3%) had frail phenotype, and 13,615 (3.9%) were moderate/severe frail according to frailty index. During median follow-up of 13.11 years, 41,558 participants experienced ≥1 CMD, 4,952 had CMM, and 20,670 died. In multi-state models, frail phenotype-related hazard ratios were 1.94 and 2.69 for transitions from no CMD to single disease and death, 1.63 and 1.67 for transitions from single CMD to CMM and death, and 1.57 for transitions from CMM to death (all P <0.001). Consistent results were observed for frailty index. Improvement of frailty reduced the risk of CMD progression and death.

Conclusions: Frailty is an independent risk factor for all transitions of CMM progression trajectory. Frailty-targeted management is a potential strategy for primary and secondary prevention of CMM beyond chronological age.

Keywords: Cardiometabolic Diseases; Multi-state model; UK Biobank.

Int J Obes (Lond)

. 2023 May 9.

doi: 10.1038/s41366-023-01312-6. Online ahead of print.

Life course BMI trajectories from childhood to mid-adulthood are differentially associated with anxiety and depression outcomes in middle age

Claire Gallagher[1], Jane Pirkis[2], Katrina A Lambert[3], Jennifer L Perret[1], Gulshan B Ali[1], Caroline J Lodge[1], Gayan Bowatte[1,4], Garun S Hamilton[5,6], Melanie C Matheson[1,7], Dinh S Bui[1], Michael J Abramson[8], E Haydn Walters[1,9], Shyamali C Dharmage[#,10], Bircan Erbas[#,3]
Affiliations expand

- PMID: 37161067

- DOI: 10.1038/s41366-023-01312-6

Abstract

Background/objective: Obesity is a risk factor for multimorbidity, including depression and possibly anxiety. However, it is currently unclear how patterns of change in BMI over the life course differentially influence the magnitude in risk of depression and anxiety in mid-adulthood. We aimed to examine associations between BMI trajectories from childhood to adulthood and the risk of depression and anxiety in middle age.

Methods: In the Tasmanian Longitudinal Health Study (n = 2416), five distinct BMI trajectories were previously defined from age 5 to 45 years using group-based modelling. At age 53, current depression and anxiety were assessed using the Patient Health Questionnaire and the Generalized Anxiety Disorder scale, respectively. Logistic regression models adjusted for potential confounders estimated associations between BMI trajectories and these outcomes.

Results: Those belonging to the child average-increasing (OR = 2.24; 95%CI: 1.24, 4.06) and persistently high (OR = 2.64; 1.26, 5.52) trajectories were more likely to have depression in middle age, compared to the persistently average trajectory. However, the odds of experiencing greater severity of depressive symptoms was highest in the child average-increasing group (OR = 2.36; 1.59, 3.49). Despite finding no evidence of association between BMI trajectories and current anxiety, we observed less severe symptoms in the child high-decreasing trajectory (OR = 0.68; 0.51, 0.91).

Conclusion: We found an increased risk of depression in middle age among individuals with a persistently high BMI from childhood to mid-adulthood and individuals with an average BMI in childhood which then increased consistently throughout adulthood. Encouragingly, resolving childhood adiposity by adulthood was associated with lesser anxiety symptoms. Taken together, these findings highlight the need to target mental health screening and treatment towards high-risk BMI trajectory groups and the importance of early interventions to prevent and resolve excess weight.

- 27 references

BMJ Open

. 2023 May 9;13(5):e063216.

doi: 10.1136/bmjopen-2022-063216.

Prevalence of multimorbidity and its associations with hospitalisation or death in Japan 2014-2019: a retrospective cohort study using nationwide medical claims data in the middle-aged generation

Yoshiyuki Saito[1,2], Ataru Igarashi[3,4], Takeo Nakayama[2], Shingo Fukuma[5]

Affiliations expand

- PMID: 37160390

- PMCID: PMC10173978

- DOI: 10.1136/bmjopen-2022-063216

Abstract

Objective: To describe the prevalence of multimorbidity and its associations with clinical outcomes across age groups.

Design: Retrospective cohort study using nationwide medical claims data.

Setting: Carried out in Japan between April 2014 and March 2019.

Participants: N=246 671 Japanese individuals aged 20-74 enrolled in the health insurance were included into the baseline data set for fiscal year (FY) 2014. Of those, N=181 959 individuals were included into the cohort data set spanning FY2014-FY2018.

Exposures: Multimorbidity was defined as having ≥2 of 15 chronic conditions according to the International Classification of Diseases 10th Revision codes of the Charlson Comorbidity Index.

Primary and secondary outcomes: Primary outcome: the standardised prevalence of multimorbidity across age groups was evaluated using data from FY2014 and extrapolated to the Japanese total population.

Secondary outcome: hospitalisation or death events were traced by month using medical claims data and insurer enrolment data. Associations between multimorbidity and 5-year hospitalisation and/or death events across age groups were analysed using a Cox regression model.

Results: The standardised prevalence rate of multimorbidity in the nationwide Japanese total population was estimated to 26.1%. The prevalence rate with age was increased, approximately 5% (ages 20-29), 10% (30-39), 20% (40-49), 30% (50-59), 50% (60-69) and 60% (70-74). Compared with individuals aged 20-39 without multimorbidity, those with multimorbidity had a higher incidence of clinical events in any age group (HR=2.43 (95% CI 2.30 to 2.56) in ages 20-39, HR=2.55 (95% CI 2.47 to 2.63) in ages 40-59 and HR=3.41 (95% CI 3.23 to 3.53) in ages ≥60). The difference in the incidence of clinical events between multimorbidity and no multimorbidity was larger than that between age groups.

Conclusions: Multimorbidity is already prevalent in the middle-aged generation and is associated with poor clinical outcomes. These findings underscore the significance of multimorbidity and highlight the urgent need for preventive intervention at the public healthcare level.

Keywords: epidemiology; health economics; preventive medicine; public health.

Conflict of interest statement

Competing interests: None declared.

- 37 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

5
Gerontologist
.
2023 May 9;63(4):637-647.
doi: 10.1093/geront/gnac069.

Developing a Medication Self-Management Program to Enhance Medication Adherence Among Older Adults With Multimorbidity Using Intervention Mapping

Chen Yang[1], Diana Tze Fan Lee[1], Xiuhua Wang[2], Sek Ying Chair[1]
Affiliations expand

- PMID: 35583327

- DOI: 10.1093/geront/gnac069

Abstract

Background and objectives: Suboptimal medication adherence is prevalent in older adults with multimorbidity. However, intervention programs for enhancing adherence in this population are limited. This study describes the development process of a medication self-management program for older adults with multimorbidity.

Research design and methods: We adopted the first 4 steps of the intervention mapping to develop the program: (1) needs assessment, including a literature review, a systematic review, and a cross-sectional study; (2) development of program outcomes and objectives; (3) selection of theory-based intervention methods and practical applications; and (4) development of the program.

Results: We conducted a needs assessment to identify factors affecting medication adherence among older adults with multimorbidity and created a logic model of the adherence problem in Step 1. In Step 2, we developed the specific program outcomes and objectives and then selected adherence information, personal motivation, social motivation, behavioral skills, and treatment experiences as modifiable and important targets that needed to change in this program. In Step 3, we chose several theory-based methods and strategies for practical applications. We finally created a nurse-led medication self-management program in Step 4. Feedback from relevant stakeholders refined the intervention protocol and materials.

Discussion and implications: The newly developed medication self-management program incorporated theory and evidence from literature and empirical studies with the engagement of multiple stakeholders, making it a contextually and culturally appropriate intervention. This study provides insights into strategies for geriatrics health care professionals to support medication self-management among older adults with multimorbidity.

Keywords: Behavior change; Intervention development; Medication management; Multiple chronic diseases; Nurse-led.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

"asthma"[MeSH Terms] OR asthma[Text Word]

1
J Allergy Clin Immunol Pract
.
. 2023 May 11;S2213-2198(23)00523-8.
doi: 10.1016/j.jaip.2023.04.039. Online ahead of print.

Assessing asthma control by impulse oscillometry and fractional expiratory nitric oxide in children with normal spirometry

Hee-Jeong Yun[1], Sang-Yong Eom[2], Youn-Soo Hahn[3]
Affiliations expand

- PMID: 37178768

- DOI: 10.1016/j.jaip.2023.04.039

Abstract

Background: Because spirometric parameters fail to address current status of asthma in some patients, additional tests are required for better evaluation of asthma.

Objective: We aimed to test the ability of impulse oscillometry (IOS) and fractional expiratory nitric oxide (FeNO) in identifying inadequately-controlled asthma (ICA) which was not uncovered by spirometry.

Methods: Recruited asthmatic children between ages of 8 and 16 years underwent spirometry, IOS, and FeNO measurements on the same day. Only subjects who had spirometric indices within normal range were included. Asthma Control Questionnaire-6

(ACQ-6) scores of ≤ 0.75 and > 0.75 indicated well-controlled asthma (WCA) and ICA. Percent predicted values (PPV) of IOS parameters and IOS reference values for upper and lower limits of normal (>95th and <5th percentile, respectively) were calculated on the basis of previously published equations.

Results: There were no significant differences in all spirometric indices between WCA (n = 59) and ICA (n = 101) groups. PPV of IOS parameters except R20 were significantly different between two groups. Receiver operating characteristic analysis showed that the highest and lowest AUCs (areas under the curve) were 0.81 and 0.67 for R5-R20 and R20 in discrimination of ICA versus WCA. The AUCs for IOS parameters were improved by combination with FeNO. Better discriminative ability of IOSIOS was also supported by the higher values of the concordance index (C-index) for R5, R5-R20, X5, and Fres than those for spirometric parameters. Compared with those with normal values, subjects with abnormal IOS parameters or high FeNO had significantly higher odds of having ICA.

Conclusion: IOS parameters and FeNO were shown to be useful in identifying children with ICA when spirometry was normal.

Keywords: Asthma; control; fractional exhaled nitric oxide; impulse oscillometry; pediatric; spirometry.

2

J Allergy Clin Immunol Pract

. 2023 May 11;S2213-2198(23)00525-1.

doi: 10.1016/j.jaip.2023.04.041. Online ahead of print.

PATTERNS OF ASTHMA MEDICATION USE IN NEW ZEALAND FOLLOWING

PUBLICATION OF NATIONAL ASTHMA GUIDELINES

Lee Hatter[1], Allie Eathorne[2], Tom Hills[2], Pepa Bruce[2], Claire Houghton[2], Mark Weatherall[3], Richard Beasley[4]
Affiliations expand

- PMID: 37178765

- DOI: 10.1016/j.jaip.2023.04.041

Abstract

Background: In June 2020, the New Zealand (NZ) adolescent and adult asthma guidelines recommended budesonide/formoterol, taken as maintenance and/or reliever therapy, as the preferred therapeutic approach.

Objective: To investigate whether these recommendations were associated with changes in clinical practice indicated by asthma medication use trends.

Methods: NZ national dispensing data for inhaler medications from January 2010 to December 2021 were reviewed. Monthly 'dispensings' of inhaled budesonide/formoterol, inhaled corticosteroid (ICS), other ICS/long-acting beta$_2$-agonists (LABA), and inhaled short-acting beta$_2$-agonists (SABA), for the 12+ age group, were displayed graphically with piecewise regression used to produce plots of rates by time with a 01 July 2020 break point. The number of dispensings in the last six months that data was available (July-December 2021) was compared with the corresponding period, July-December 2019.

Results: Budesonide/formoterol dispensing increased markedly after 01 July 2020 (regression coefficient 41.1 inhalers dispensed/100,000 population/per month (95%CI: 36.3 to 45.6, P<0.0001); 64.7% increase in number of dispensings between July-December 2019 and July-December 2021), in contrast to 'other ICS/LABA' (regression coefficient -15.9 (95%CI: -22.2 to -9.6, P<0.0001); -1.7% decrease) and SABA (regression coefficient -14.7 (95%CI: -29.7 to 0.3, P=0.055); -10.6% decrease), respectively.

Conclusion: In NZ a progressive increase in budesonide/formoterol dispensing, accompanied by a reduction in SABA and 'other ICS/LABA' dispensing, occurred following publication of the 2020 NZ asthma guidelines. While acknowledging the limitations in the interpretation of temporal associations, these findings suggest the transition to ICS/formoterol reliever-based therapy can be achieved if recommended and promoted as the preferred therapeutic approach in national guidelines.

Keywords: ICS/formoterol; New Zealand; asthma; dispensing; guidelines.

J Allergy Clin Immunol Pract

. 2023 May 11;S2213-2198(23)00524-X.
doi: 10.1016/j.jaip.2023.04.040. Online ahead of print.

Prospective real-world analysis of asthma patients with preserved and reduced physical activity

Hiroshi Iwamoto[1], Tsunahiko Hirano[2], Yoshihiro Amano[3], Keita Murakawa[2], Ayumi Fukatsu-Chikumoto[2], Yoshikazu Yamaji[2], Mayuka Yamane[4], Kazuki Anabuki[4], Toshihito Otani[5], Naoko Higaki[5], Shintaro Miyamoto[5], Takeshi Isobe[3], Akihito Yokoyama[4], Kazuto Matsunaga[2], Noboru Hattori[5]
Affiliations expand

- PMID: 37178763

- DOI: 10.1016/j.jaip.2023.04.040

Abstract

Background: Asthma is a highly heterogeneous airway disease, and the clinical characteristics of asthma patients with preserved and reduced physical activity are poorly understood.

Objective: We aimed to investigate the risk factors and clinical phenotypes associated with reduced physical activity in a wide range of patients with asthma.

Methods: We conducted a prospective observational study of 138 patients with asthma, including patients with asthma without chronic obstructive pulmonary disease (COPD) (n = 104) and asthma-COPD overlap (n = 34), and 42 healthy controls. Physical activity levels were measured for two weeks using a triaxial accelerometer at baseline and one year later.

Results: Higher eosinophils and body mass index (BMI) were associated with reduced physical activity in patients with asthma without COPD. Cluster analysis of asthma without COPD revealed four asthma phenotypes. We identified a cluster with preserved physical activity (n = 43) that was characterized by good symptom control and lung function and included a high proportion of biologics users (34.9%). Multivariate regression analysis revealed that patients with late-onset eosinophilic (n = 21), high BMI non-eosinophilic (n = 14), and symptom-predominant asthma phenotypes (n = 26) had lower levels of physical activity than controls. Asthma-COPD overlap patients also had significantly lower physical activity levels than controls. Similar trends in physical activity levels were observed in each asthma group at one-year follow-up.

Conclusion: This study showed the clinical features of asthma patients with preserved and reduced physical activity. Reduced physical activity was observed in various asthma phenotypes and in asthma-COPD overlap.

Keywords: asthma-chronic obstructive pulmonary disease overlap syndrome; biological products; eosinophils; obesity.

J Allergy Clin Immunol Pract

. 2023 May 11;S2213-2198(23)00526-3.

doi: 10.1016/j.jaip.2023.04.042. Online ahead of print.

Poorer Patient Mental and Social Health is Associated with Worse Respiratory Outcomes in School-Age Children with Pediatric Intensive Care Use for Life-threatening Asthma

Jocelyn R Grunwell[1], Mallory Tidwell[2], Sydney Zack[2], Nadine Najjar[3], Anne M Fitzpatrick[3]
Affiliations expand

- PMID: 37178762

- DOI: 10.1016/j.jaip.2023.04.042

No abstract available

Keywords: asthma exacerbation; patient-reported outcome measures; pediatric intensive care unit; status asthmaticus.

J Allergy Clin Immunol

-
-
-

. 2023 May 11;S0091-6749(23)00568-7.
doi: 10.1016/j.jaci.2023.04.017. Online ahead of print.

Identification of cough variant asthma phenotypes based on clinical and pathophysiological data

Wenzhi Zhan[1], Feng Wu[2], Yunhui Zhang[3], Lin Lin[4], Wen Li[5], Wei Luo[1], Fang Yi[1], Yuanrong Dai[6], Suyun Li[7], Jiangtao Lin[8], Yadong Yuan[9], Chen Qiu[10], Yong Jiang[11], Limin Zhao[12], Meihua Chen[13], Zhongmin Qiu[14], Ruchong Chen[1], Jiaxing Xie[1], Chunxing Guo[1], Mei Jiang[1], Xiaohong Yang[15], Guochao Shi[16], Dejun Sun[17], Rongchang Chen[18], Nanshan Zhong[1], Huahao Shen[5], Kefang Lai[19]
Affiliations expand

- PMID: 37178731

- DOI: 10.1016/j.jaci.2023.04.017

Abstract

Background: Cough variant asthma (CVA) may respond differently to anti-asthmatic treatment. There is limited data on the heterogeneity of CVA.

Objective: We aimed to classify patients with CVA using cluster analysis based on clinico-physiological parameters and to unveil the underlying molecular pathways of these phenotypes with transcriptomic data of sputum cells.

Methods: K-mean clustering was applied to 342 newly physician-diagnosed patients with CVA from a prospective, multicenter, observational cohort using 10 pre-specified baseline clinic-pathophysiological variables. The clusters were compared based on clinical features, treatment response and sputum transcriptomic data.

Results: Three stable CVA clusters were identified. Cluster 1 (n= 176) was characterized by female predominance, late-onset, normal lung function, and a low proportion of complete resolution of cough (60.8%) after anti-asthmatic treatment. Cluster 2 (n=105) presented with young, nocturnal cough, atopy, type 2-high inflammation, and a high proportion of complete resolution of cough (73.3%) with highly upregulated co-expression gene network that related to type 2 immunity. Cluster 3 (n= 61) had a high body mass index, long duration, family history of asthma, low lung function, and low proportion of complete resolution of cough (54.1%). Th17 immunity and type 2 immunity co-expression gene networks were both upregulated in clusters 1 and 3.

Conclusion: Three clusters of CVA were identified with different clinical, pathophysiological, and transcriptomic features and responses to anti-asthmatics treatment, which may improve our understanding of pathogenesis and develop individualized treatment of cough in asthma.

Keywords: airway inflammation; cluster; cough; cough variant asthma; transcriptome; treatment response.

6

J Clin Med

. 2023 May 7;12(9):3330.

doi: 10.3390/jcm12093330.

Value of Fractional Exhaled Nitric Oxide in Diagnosing Mild Asthma Responsive to Inhaled Corticosteroids

Natasa Karamarkovic Lazarusic[1], Eugenija Basioli Kasap[2], Ena Tolic[3], Martina Dokoza[2], Gordana Pavlisa[3,4]

Affiliations expand

- PMID: 37176770

- DOI: 10.3390/jcm12093330

Abstract

Background: Mild asthma is often characterized by normal spirometric values and a negative bronchodilation test (BDT), which makes accurate diagnosis challenging. The aim of our study was to evaluate the diagnostic accuracy of fractional exhaled nitric oxide (FeNO) in mild asthma.

Methods: In adults with symptoms suggestive of asthma and normal spirometry values, BDT, FeNO, BPT and skin prick testing were performed. Patients with positive BPT started inhaled corticosteroid (ICS) therapy. Those with positive response to ICS were considered asthmatics.

Results: There were 142 asthmatics and 140 non-asthmatics. No significant difference was found in BDT between the groups, $p = 0.233$. Median FeNO levels were significantly higher in the asthma group (49.5 ppb) than in the non-asthma group (23 ppb), $p < 0.001$. BPT was positive in 145 (51.42%) and negative in 137 (48.58%) patients. Positive response to ICS treatment was recorded in 142/145 (97.9%) patients. In diagnosing asthma, FeNO ≥ 25 ppb had a sensitivity of 75.4% and specificity of 47.9%.

Conclusions: FeNO has insufficient sensitivity and specificity in mild asthma and the application of BPT is often necessary to establish an accurate diagnosis.

Keywords: diagnostic accuracy; fractional exhaled nitric oxide; methacholine provocation test; mild asthma; sensitivity; specificity.

Editorial

J Clin Med

. 2023 May 7;12(9):3322.
doi: 10.3390/jcm12093322.

Inhaled Corticosteroids and Bronchiectasis: Friend or Foe?

Miguel Angel Martinez-Garcia[1][2][3]
Affiliations expand

- PMID: 37176763

- DOI: 10.3390/jcm12093322

Abstract

The three most common chronic inflammatory airway diseases are asthma, chronic obstructive pulmonary disease (COPD), and bronchiectasis [...].

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Review

Allergy Asthma Clin Immunol
-
-
-
. 2023 May 12;19(1):39.
doi: 10.1186/s13223-023-00794-3.

Diagnostic value of IL-6 for patients with asthma: a meta-analysis

Ruilin Pan[#1], Shougang Kuai[#2], Qingqing Li[1], Xuming Zhu[3], Tingting Wang[4], Yubao Cui[5]
Affiliations expand

- PMID: 37173781

- DOI: 10.1186/s13223-023-00794-3

Abstract

Background: IL-6 is a pleotropic cytokine that acts as a pro-inflammatory mediator and acute-phase response inducer, but has also been reported to possess anti-inflammatory properties. The objective of this study was to assess the validity of serum IL-6 test for diagnosis of asthma.

Methods: A literature search was conducted using PubMed, Embase, and Cochrane library from January 2007 to March 2021 to identify relevant studies. Eleven studies were included in this analysis, involving 1977 patients with asthma and 1591 healthy non-asthmatic controls. The meta-analysis was performed using Review Manager 5.3 software and Stata 16.0. Random effect model or fixed effect model (FEM) was used to estimate the standardized mean differences (SMDs) with 95% confidence intervals (CIs).

Results: The meta-analysis results revealed that the serum IL-6 levels were higher in asthmatic patients than healthy non-asthmatic controls (SMD 1.31, 95% CI 0.82-1.81, P < 0.00001). IL-6 levels are significantly elevated in pediatric patients with asthma (SMD 1.58, 95% CI 0.75-2.41, P = 0.0002) and mildly elevated in adult patients with asthma (SMD 1.08, 95% CI 0.27-1.90, P = 0.009). In addition, a subgroup analysis of asthma disease status showed that IL-6 levels were increased in stable (SMD 0.69, 95% CI 0.28-1.09, P = 0.009) and exacerbation asthma (SMD 2.15, 95% CI 1.79-2.52, P < 0.00001) patients.

Conclusion: The results of this meta-analysis suggest that serum IL-6 levels were significantly elevated in asthmatic patients as compared to normal population. IL-6 levels can be used as an auxiliary indicator to distinguish individuals with asthma from healthy non-asthmatic controls.

Keywords: Asthma; Biomarker; IL-6; Meta-analysis.

- 35 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

Sci Rep
.
. 2023 May 12;13(1):7745.
doi: 10.1038/s41598-023-31373-6.

The association between body mass index, abdominal fatness, and weight change and the risk of adult asthma: a systematic review and meta-analysis of cohort studies

Ganeshkumar Parasuaraman[1], Lavanya Ayyasamy[2], Dagfinn Aune[3,4,5], Abhijit Sen[6,7], Ramya Nagarajan[2], Prabhu Rajkumar[2], Saravanakumar Velusamy[2], P Manickam[2], Satish Sivaprakasam[2]
Affiliations expand

- PMID: 37173338

- DOI: 10.1038/s41598-023-31373-6

Abstract

Obesity has been associated with increased risk of adult asthma, however, not all studies have found a clear association between overweight and the incidence of asthma, and data on other adiposity measures have been limited. Hence, we aimed to summarize evidence on association between adiposity and adult asthma. Relevant studies were retrieved through searches conducted in PubMed, and EMBASE up to March 2021. A total of sixteen studies (63,952 cases and 1,161,169 participants) were included in the quantitative synthesis. The summary RR was 1.32 (95% CI 1.21-1.44, I^2 = 94.6%, $p_{heterogeneity}$ < 0.0001, n = 13) per 5 kg/m^2 increase in BMI, 1.26 (95% CI 1.09-1.46, I^2 = 88.6%, $p_{heterogeneity}$ < 0.0001, n = 5) per 10 cm increase in waist circumference and 1.33 (95% CI 1.22-1.44, I^2 = 62.3%, $p_{heterogeneity}$= 0.05, n = 4) per 10 kg increase in weight gain. Although the test for nonlinearity

was significant for BMI ($p_{nonlinearity} < 0.00001$), weight change ($p_{nonlinearity} = 0.002$), and waist circumference ($p_{nonlinearity} = 0.02$), there was a clear dose-response relationship between higher levels of adiposity and asthma risk. The magnitude of the associations and the consistency of the results across studies and adiposity measures provide strong evidence that overweight and obesity, waist circumference and weight gain increases asthma risk. These findings support policies to curb the global epidemic of overweight and obesity.

- 50 references

Review

Curr Allergy Asthma Rep

.

. 2023 May 12.

doi: 10.1007/s11882-023-01090-1. Online ahead of print.

The Effects of Wildfire Smoke on Asthma and Allergy

Terry L Noah[1,2], Cameron P Worden[3,4], Meghan E Rebuli[5,4], Ilona Jaspers[5,4]

Affiliations expand

- PMID: 37171670

- DOI: 10.1007/s11882-023-01090-1

Abstract

Purpose of review: To review the recent literature on the effects of wildfire smoke (WFS) exposure on asthma and allergic disease, and on potential mechanisms of disease.

Recent findings: Spatiotemporal modeling and increased ground-level monitoring data are allowing a more detailed picture of the health effects of WFS exposure to emerge, especially with regard to asthma. There is also epidemiologic and some experimental evidence to suggest that WFS exposure increases allergic predisposition and upper airway or sinonasal disease, though much of the literature in this area is focused more generally on $PM_{2.5}$ and is not specific for WFS. Experimental evidence for mechanisms includes disruption of epithelial integrity with downstream effects on inflammatory or immune pathways, but experimental models to date have not consistently reflected human disease in this area. Exposure to WFS has an acute detrimental effect on asthma. Potential mechanisms are suggested by in vitro and animal studies.

Keywords: Allergy; Asthma; Wildfire smoke; Wood smoke.

- 95 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

11

J Allergy Clin Immunol Pract

-
-
-

. 2023 May 9;S2213-2198(23)00480-4.
doi: 10.1016/j.jaip.2023.04.036. Online ahead of print.

Reduced asthma exacerbations in adult patients treated with bronchial thermoplasty

Tomohiro Akaba[1], Taisuke Jo[2], Masao Iwagami[3], Yohei Hashimoto[4], Hiroki Matsui[4], Kiyohide Fushimi[5], Etsuko Tagaya[6], Hideo Yasunaga[4]
Affiliations expand

- PMID: 37169286

- DOI: 10.1016/j.jaip.2023.04.036

Abstract

Background: Bronchial thermoplasty (BT) has been shown to be effective in randomized controlled trials of patients with severe asthma who failed to achieve disease control with high-dose inhaled corticosteroids combined with bronchodilators. However, the effectiveness of BT in real-world clinical settings, especially among the Asian population has not been determined.

Objective: To evaluate the effectiveness of BT using a nationwide database.

Methods: Using the inpatient and outpatient data from the Japanese Diagnosis Procedure Combination database, we applied a self-controlled case series design to evaluate changes in the composite outcome of hospital admissions and emergency department visits, as well as systemic corticosteroid dose, between 1 year before and after BT. We also conducted subgroup analyses based on patients' profiles.

Results: Among the 561 patients with asthma who underwent BT treatment between September 2014 and March 2020, 102 patients with at least one outcome were analyzed. BT was significantly associated with an improvement in the composite outcome of hospital admission and emergency department visits (incidence rate ratio, 0.53; 95% confidence interval, 0.44-0.64). Systemic corticosteroid use was reduced after BT sessions (1931.5 [1341.2-3725.3] mg to 641.3 [134.2-1691.1] mg per person-year ($p<0.001$)). Although all groups showed a significant improvement in the composite outcome in the subgroup analyses, BT tended to be less effective among older people aged > 65 years and those with higher body mass index (> 25 kg/m^2).

Conclusion: The present study using real-world data suggests that BT may improve asthma control, however the effectiveness of BT can vary depending on patient baseline profiles.

Keywords: Asthma; Bronchial thermoplasty; Real-world data; Self-controlled case series.

12

J Asthma

. 2023 May 11;1-12.

doi: 10.1080/02770903.2023.2213327. Online ahead of print.

Patterns of allergic sensitization in adults with severe asthma: The ATLAS non-interventional study

Eva Lücke[1], Burkhart Schraven[2,3,4], Katrin Borucki[5], Anke Lux[6], Dirk Reinhold[2,3,4], Qingyu Wu[1], Jens Schreiber[1,3,4]

Affiliations expand

- PMID: 37167019

- DOI: 10.1080/02770903.2023.2213327

Abstract

ObjectivesSevere asthma is heterogeneous, with childhood-onset asthma believed more likely to be allergic, whereas adult-onset asthma is considered typically non-allergic. However, the allergic diagnosis is typically by exclusion: if patients do not react to an

allergen panel, which is not standardized and often limited to few allergens, they are considered non-allergic. The overall aim of the ATLAS study was to characterize the sensitization to allergens in severe asthma (independent of phenotype).MethodsSingle-visit, cross-sectional, non-interventional study in adults with severe asthma. Analyses were conducted for total and specific immunoglobulin E against 53 allergens, overall and in subgroups, including age at asthma onset (<20 [childhood-onset] and >40 years of age).ResultsAmong 1010 recruited patients, 28.4% reported childhood-onset asthma and 33.6% onset >40 years of age. After excluding patients receiving omalizumab/anti-IL5 therapy, 27.6% were not sensitized to any tested allergens, whereas 19.1% were sensitized to >10 allergens. All allergens triggered sensitization in some patients. Baseline characteristics in the two onset subgroups were similar; 23.2% with childhood-onset asthma were not sensitized to any allergen, compared to 32.0% with onset >40 years of age.ConclusionWhen a broad panel of allergens is used for sensitization testing, as many as three quarters of patients with severe asthma display sensitivity to at least one allergen, with substantial overlaps in all characteristics between the two age-at-onset subgroups. All of the tested allergens triggered a response in at least some patients, emphasizing the importance of including a broad range of allergens in any testing panel.

Keywords: Allergens; Asthma; Eosinophils; Immunoglobulin E; Subgroups.

Editorial

Respirology

-
-
-

. 2023 May 10.
doi: 10.1111/resp.14517. Online ahead of print.

Mepolizumab attenuates ILC2s proliferation and activity in adults with severe eosinophilic asthma

Guy Brusselle[1], Sebastian Riemann[1], Tania Maes[1]
Affiliations expand

- PMID: 37164907

- DOI: 10.1111/resp.14517

No abstract available

Keywords: asthma; clinical allergy and immunology; cytokine; eosinophil; inflammation.

- 13 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Review

J Exp Med
-
-
-
. 2023 Jun 5;220(6):e20221094.
doi: 10.1084/jem.20221094. Epub 2023 May 10.

T helper 2 cells in asthma

James A Harker[1], Clare M Lloyd[1]
Affiliations expand

- PMID: 37163370

- PMCID: PMC10174188

- DOI: 10.1084/jem.20221094

Free PMC article

Abstract

Allergic asthma is among the most common immune-mediated diseases across the world, and type 2 immune responses are thought to be central to pathogenesis. The importance of T helper 2 (Th2) cells as central regulators of type 2 responses in asthma has, however, become less clear with the discovery of other potent innate sources of type 2 cytokines and innate mediators of inflammation such as the alarmins. This review provides an update of our current understanding of Th2 cells in human asthma, highlighting their many guises and functions in asthma, both pathogenic and regulatory, and how these are influenced by the tissue location and disease stage and severity. It also explores how biologics targeting type 2 immune pathways are impacting asthma, and how these have the potential to reveal hitherto underappreciated roles for Th2 cell in lung inflammation.

Conflict of interest statement

Disclosures: the authors declare no competing interests exist.

- 164 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

JEM > UNIMORE

Proceed to details

Cite

Share

15

Review

Curr Allergy Asthma Rep
.
. 2023 May 9;1-12.
doi: 10.1007/s11882-023-01084-z. Online ahead of print.

Artificial Intelligence: Exploring the Future of Innovation in Allergy Immunology

Derek MacMath[1], Meng Chen[2], Paneez Khoury[3]
Affiliations expand

- PMID: 37160554
- PMCID: PMC10169188
- DOI: 10.1007/s11882-023-01084-z

Free PMC article

Abstract

Purpose of review: Artificial intelligence (AI) has increasingly been used in healthcare. Given the capacity of AI to handle large data and complex relationships between variables, AI is well suited for applications in healthcare. Recently, AI has been applied to allergy research.

Recent findings: In this article, we review how AI technologies have been utilized in basic science and clinical allergy research for asthma, atopic dermatitis, rhinology, adverse reactions to drugs and vaccines, food allergy, anaphylaxis, urticaria, and eosinophilic gastrointestinal disorders. We discuss barriers for AI adoption to improve the care of patients with atopic diseases. These studies demonstrate the utility of applying AI to the field of allergy to help investigators expand their understanding of disease pathogenesis, improve diagnostic accuracy, enable prediction for treatments and outcomes, and for drug discovery.

Keywords: Algorithmic bias; Allergy; Artificial intelligence; Immunology; Machine learning; Neural network.

Conflict of interest statement

Derek MacMath, Meng Chen, and Paneez Khoury declare that they have no conflict of interest.

- 103 references
- 2 figures

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

16

Review

Respir Care

. 2023 May 9;respcare.10913.
doi: 10.4187/respcare.10913. Online ahead of print.

2022 Year in Review: Pediatric Asthma

Joyce A Baker[1]

Affiliations expand

- PMID: 37160339

- DOI: 10.4187/respcare.10913

Abstract

Asthma is the most common chronic disease in children. Asthma is a heterogeneous disease characterized by variable, reversible airway obstruction and hyper-responsive airways. There is a high economic burden due to a child having poorly controlled asthma with one or more asthma exacerbations resulting in an emergency department visit or hospitalization in a year. Publications on diagnosis, treatment, and management of pediatric asthma are ongoing with over 2,549 papers published from January-November 2022. The intent of this paper is to summarize 8 key topics that have prompted discussions with local, regional, and national asthma experts due to a shift in clinical practice or lessons learned from the recent pandemic that may have future application.

Keywords: COVID-19; asthma; pediatric; phenotypes; virus infections; wheezing.

Int J Epidemiol

. 2023 May 9;dyad056.
doi: 10.1093/ije/dyad056. Online ahead of print.

Fine and coarse particulate air pollution and hospital admissions for a wide range of respiratory diseases: a nationwide case–crossover study

Jian Lei[1], Renjie Chen[1], Cong Liu[1], Yixiang Zhu[1], Xiaowei Xue[1], Yixuan Jiang[1], Su Shi[1], Ya Gao[1], Haidong Kan[1,2], Jianwei Xuan[3]
Affiliations expand

- PMID: 37159523

- DOI: 10.1093/ije/dyad056

Abstract

Background: The associations between fine and coarse particulate matter (PM2.5 and PM2.5-10) air pollution and hospital admissions for full-spectrum respiratory diseases were rarely investigated, especially for age-specific associations. We aim to estimate the age-specific associations of short-term exposures to PM2.5 and PM2.5-10 with hospital admissions for full-spectrum respiratory diseases in China.

Methods: We conducted an individual-level case-crossover study based on a nationwide hospital-based registry including 153 hospitals across 20 provincial regions in China in 2013-20. We applied conditional logistic regression models and distributed lag models to estimate the exposure- and lag-response associations.

Results: A total of 1 399 955 hospital admission records for various respiratory diseases were identified. The associations of PM2.5 and PM2.5-10 with total respiratory hospitalizations lasted for 4 days, and an interquartile range increase in PM2.5 (34.5 μg/m3) and PM2.5-10 (26.0 μg/m3) was associated with 1.73% [95% confidence interval (95% CI): 1.34%, 2.12%)] and 1.70% (95% CI: 1.31%, 2.10%) increases, respectively, in total respiratory hospitalizations over lag 0-4 days. Acute respiratory infections (i.e. pneumonia, bronchitis and bronchiolitis) were consistently associated with PM2.5 or PM2.5-10 exposure across different age groups. We found the disease spectrum varied by age, including rarely reported findings (i.e. acute laryngitis and tracheitis, and influenza) among children and well-established associations (i.e. chronic obstructive pulmonary disease, asthma, acute bronchitis and emphysema) among older populations. Besides, the associations were stronger in females, children and older populations.

Conclusions: This nationwide case-crossover study provides robust evidence that short-term exposure to both PM2.5 and PM2.5-10 was associated with increased hospital admissions for a wide range of respiratory diseases, and the spectra of respiratory diseases varied by age. Females, children and older populations were more susceptible.

Keywords: Particulate matter; case-crossover study; full-spectrum respiratory disease; hospital admission.

Observational Study

NPJ Prim Care Respir Med

. 2023 May 8;33(1):19.
doi: 10.1038/s41533-023-00336-9.

Suboptimally controlled asthma in patients treated with inhaled ICS/LABA: prevalence, risk factors, and outcomes

Shiyuan Zhang[1], John White[2], Alyssa Goolsby Hunter[2], David Hinds[3], Andrew Fowler[3], Frances Gardiner[3], David Slade[4], Sharanya Murali[2], Wilhelmine Meeraus[3]
Affiliations expand

- PMID: 37156824
- PMCID: PMC10167343
- DOI: 10.1038/s41533-023-00336-9

Abstract

This observational claims-linked survey study assessed the prevalence of and risk factors for suboptimal asthma control and healthcare utilization in adults with asthma receiving fixed-dose combination (FDC) inhaled corticosteroid/long-acting β_2-agonist (ICS/LABA). Commercially insured adults from the Optum Research Database were invited to complete the Asthma Control Test (ACT) and Asthma Control Questionnaire-6 (ACQ-6). Among participants (N = 428), 36.4% (ACT-assessed) and 55.6% (ACQ-6-assessed) had inadequately controlled asthma. Asthma-related quality of life was worse and asthma-related healthcare resource utilization was higher in poorly controlled asthma. Factors associated with ACT-defined suboptimal asthma control in multivariate analysis included: frequent short-acting β_2-agonist (SABA) use, asthma-related outpatient visits, lower treatment adherence, and lower education levels. During follow-up, factors associated with asthma exacerbations and/or high SABA use included: inadequately controlled asthma (ACT-assessed), body mass index ≥30 kg/m^2, and high-dose ICS/LABA. Approximately 35-55% of adults with asthma were inadequately controlled despite FDC ICS/LABA; poor control was associated with worse disease outcomes.

Conflict of interest statement

The authors declare no competing non-financial interests but the following competing financial interests: A.F., F.G., D.S., and S.Z. are employees of GSK and hold stocks or shares in GSK; D.H. and W.M. were employees of GSK at the time of the study and held/hold stocks or shares in GSK; S.M. and J.W. are employees of Optum; A.G.H. was an employee of Optum at the time of the study; Optum was contracted by GSK to conduct the study; A.G.H. and S.M. hold stocks or shares in UnitedHealth Group (UNH), Optum's parent company.

- 37 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Review

Curr Allergy Asthma Rep
.
. 2023 May 8.
doi: 10.1007/s11882-023-01079-w. Online ahead of print.

Mechanistic and Therapeutic Approaches to Occupational Exposure-Associated Allergic and Non-Allergic Asthmatic Disease

Aaron D Schwab[1], Jill A Poole[2]
Affiliations expand

- PMID: 37154874

- DOI: 10.1007/s11882-023-01079-w

Abstract

Purpose of review: Occupational lung disease, including asthma, is a significant cause of disability worldwide. The dose, exposure frequency, and nature of the causal agent influence the inflammatory pathomechanisms that inform asthma disease phenotype and progression. While surveillance, systems engineering, and exposure mitigation strategies are essential preventative considerations, no targeted medical therapies are currently available to ameliorate lung injury post-exposure and prevent chronic airway disease development.

Recent findings: This article reviews contemporary understanding of allergic and non-allergic occupational asthma mechanisms. In addition, we discuss the available therapeutic options, patient-specific susceptibility and prevention measures, and recent scientific advances in post-exposure treatment conception. The course of occupational lung disease that follows exposure is informed by individual predisposition, immunobiologic response,

agent identity, overall environmental risk, and preventative workplace practices. When protective strategies fail, knowledge of underlying disease mechanisms is necessary to inform targeted therapy development to lessen occupational asthma disease severity and occurrence.

Keywords: Airway hyperresponsiveness; Allergy; Asthma; Immunotherapy; Inflammation; Occupational lung disease.

- 118 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

20

Sci Immunol

. 2023 May 12;8(83):eabq6352.
doi: 10.1126/sciimmunol.abq6352. Epub 2023 May 5.

A human model of asthma exacerbation reveals transcriptional programs and cell circuits specific to allergic asthma

Jehan Alladina[1,2], Neal P Smith[2,3,4], Tristan Kooistra[1,2], Kamil Slowikowski[2,3,4], Isabela J Kernin[2,3,4], Jacques Deguine[3], Henry L Keen[5], Kasidet Manakongtreecheep[2,3,4], Jessica Tantivit[2,3,4], Rod A Rahimi[1,2], Susan L Sheng[1], Nhan D Nguyen[1,2], Alexis M Haring[1,2], Francesca L Giacona[1,2], Lida P Hariri[1,6], Ramnik J Xavier[3,7,8], Andrew D Luster[2,3,9], Alexandra-Chloé Villani[2,3,4], Josalyn L Cho[10], Benjamin D Medoff[1,2]

Affiliations expand

- PMID: 37146132

- DOI: 10.1126/sciimmunol.abq6352

Abstract

Asthma is a chronic disease most commonly associated with allergy and type 2 inflammation. However, the mechanisms that link airway inflammation to the structural changes that define asthma are incompletely understood. Using a human model of allergen-induced asthma exacerbation, we compared the lower airway mucosa in allergic asthmatics and allergic non-asthmatic controls using single-cell RNA sequencing. In response to allergen, the asthmatic airway epithelium was highly dynamic and up-regulated genes involved in matrix degradation, mucus metaplasia, and glycolysis while failing to induce injury-repair and antioxidant pathways observed in controls. *IL9*-expressing pathogenic T_H2 cells were specific to asthmatic airways and were only observed after allergen challenge. Additionally, conventional type 2 dendritic cells (DC2 that express *CD1C*) and *CCR2*-expressing monocyte-derived cells (MCs) were uniquely enriched in asthmatics after allergen, with up-regulation of genes that sustain type 2 inflammation and promote pathologic airway remodeling. In contrast, allergic controls were enriched for macrophage-like MCs that up-regulated tissue repair programs after allergen challenge, suggesting that these populations may protect against asthmatic airway remodeling. Cellular interaction analyses revealed a T_H2-mononuclear phagocyte-basal cell interactome unique to asthmatics. These pathogenic cellular circuits were characterized by type 2 programming of immune and structural cells and additional pathways that may sustain and amplify type 2 signals, including TNF family signaling, altered cellular metabolism, failure to engage antioxidant responses, and loss of growth factor signaling. Our findings therefore suggest that pathogenic effector circuits and the absence of proresolution programs drive structural airway disease in response to type 2 inflammation.

Comment in

- See no allergen, hear no allergen, speak no allergen!
  Gay ACA, Nawijn MC.Sci Immunol. 2023 May 12;8(83):eadh0597. doi: 10.1126/sciimmunol.adh0597. Epub 2023 May 5.PMID: 37146130 Review.

Review

Sci Immunol
.
. 2023 May 12;8(83):eadh0597.
doi: 10.1126/sciimmunol.adh0597. Epub 2023 May 5.

See no allergen, hear no allergen, speak no allergen!

Aurore C A Gay[1,2], Martijn C Nawijn[1,2]
Affiliations expand

- PMID: 37146130

- DOI: 10.1126/sciimmunol.adh0597

Abstract

Segmental allergen challenge in allergic patients with asthma reveals a previously unknown role for monocytes in the T helper 2 (T_H2)-dependent inflammatory response, whereas in allergic controls without asthma, allergen unresponsiveness seems to be maintained through epithelial-myeloid cell cross-talk that prevents T_H2 cell activation (see related Research Article by Alladina *et al.*).

Comment on

- A human model of asthma exacerbation reveals transcriptional programs and cell circuits specific to allergic asthma.
  Alladina J, Smith NP, Kooistra T, Slowikowski K, Kernin IJ, Deguine J, Keen HL, Manakongtreecheep K, Tantivit J, Rahimi RA, Sheng SL, Nguyen ND, Haring AM, Giacona FL, Hariri LP, Xavier RJ, Luster AD, Villani AC, Cho JL, Medoff BD.Sci Immunol. 2023 May 12;8(83):eabq6352. doi: 10.1126/sciimmunol.abq6352. Epub 2023 May 5.PMID: 37146132

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

J Ethnopharmacol
. 2023 May 10;307:116013.
doi: 10.1016/j.jep.2022.116013. Epub 2022 Dec 28.

β-Hydroxybutyric acid upregulated by Suhuang antitussive capsule ameliorates cough variant asthma through GSK3β/AMPK-Nrf2 signal axis

Hong Jiang[1], Ziyu Bai[1], Yongyu Ou[2], Huiling Liu[1], Zilin Si[1], Yafang Liu[1], Xiaoqiong Liu[1], Xiaoqing Liu[3], Zhihao Zhang[4], Ninghua Tan[5]
Affiliations expand

- PMID: 36586526

- DOI: 10.1016/j.jep.2022.116013

Abstract

Ethnopharmacological relevance: Cough variant asthma (CVA) is a chronic inflammatory disease characterized by cough as the main symptom. Suhuang antitussive capsule (Suhuang), one of traditional Chinese patent medicines, mainly treats CVA clinically. Previous studies have shown that Suhuang significantly improved CVA, post-infectious

cough (PIC), sputum obstruction and airway remodeling. However, the effect of Suhuang on ovalbumin-induced (OVA-induced) metabolic abnormalities in CVA is unknown.

Aim of the study: This study aimed to identify potential metabolites associated with efficacy of Suhuang in the treatment of CVA, and determined how Suhuang regulates metabolites, and differential metabolites reduce inflammation and oxidative stress.

Materials and methods: Rats were given 1 mg OVA/100 mg aluminum hydroxide in the 1st and 7th days by intraperitoneal injection and challenged by atomizing inhalation of 1% OVA saline solution after two weeks to establish the CVA model. Rats were intragastrically (i.g.) administrated with Suhuang at 1.4 g/kg and β-hydroxybutyric acid (β-HB) were given with different concentrations (87.5 and 175 mg/kg/day) by intraperitoneal injection for 2 weeks. After 26 days, GC-MS-based metabolomic approach was applied to observe metabolic changes and search differential metabolites. The number of coughs, coughs latencies, enzyme-linked immunosorbent assay (ELISA), histological analysis and quantitative-polymerase chain reaction (Q-PCR) were used to investigate the effects of Suhuang. Then β-HB on CVA rats, NLRP3 inflammasome and GSK3β/AMPK/Nrf2 signalling pathway were detected by western blotting.

Results: The results showed that Suhuang treatment significantly enhanced the serum level of β-HB. Interestingly, exposure to exogenous β-HB was also protective against OVA-induced CVA. β-HB significantly reduced the number of coughs and lengthened coughs latencies, improved lung injury, reduced the secretion of various cytokines, and directly inhibited the NLRP3 inflammasome. In addition, β-HB increased the nuclear accumulation of Nrf2 by activating the GSK3β/AMPK signaling axis, and then inactivating the NF-κB signaling pathway, effectively protecting OVA-induced CVA from oxidative stress and inflammation.

Conclusions: The results of this study shows that β-HB can reduce inflammation and oxidative stress, the increased production of β-HB in serum might be the crucial factor for Suhuang to exert its effect in the treatment of CVA.

Keywords: Compound C (PubChem CID: 11524144); Cough variant asthma; Dexamethasone (PubChem CID: 5743); GSK3β/AMPK/Nrf2; Lipopolysaccharide (PubChem CID: 11970143); Metabolomics; Ovalbumin (PubChem CID: 56832351); Pulmonary dysfunction; Sodium nitroprusside (PubChem CID: 11953895); Suhuang antitussive capsule; Trigonelline (PubChem CID: 5570); β-Hydroxybutyric acid; β-Hydroxybutyric acid (PubChem CID: 92135).

Conflict of interest statement

Declaration of competing interest The authors declare no conflict of interest related to this paper.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

"rhinitis"[MeSH Terms] OR rhinitis[Text Word]

1
Int Forum Allergy Rhinol
.
2023 May 13.
doi: 10.1002/alr.23181. Online ahead of print.

Distinct eicosanoid patterns in severe recalcitrant nasal polyposis

Axel Nordström[1], Mattias Jangard[2], Marie Svedberg[1], Michael Ryott[2], Maria Kumlin[1]
Affiliations expand

- PMID: 37179460

- DOI: 10.1002/alr.23181

Abstract

Background: Although altered eicosanoid levels are related to disease severity in chronic rhinosinusitis with nasal polyps (CRSwNP), identifying patients prone to recurrent NPs is still difficult. We investigated levels of nasally secreted eicosanoids before and after NP surgery in patients with or without NP recurrence and explored potential endotypes based on pre-surgical eicosanoid levels.

Methods: Levels of leukotriene (LT) E_4 , LTB_4 , prostaglandin (PG) D_2 , PGE_2 and 15(S) hydroxyeicosatetraenoic acid (15(S)-HETE) were measured in nasal secretions with specific immunoassays at pre-surgery (n = 38) and six- and 12-months post-surgery (n = 35) where NP recurrence was identified endoscopically. Pre- and post-surgical levels were compared

between patients with and without NP recurrence. Eicosanoid patterns among patients were explored with cluster analysis and evaluated with clinical parameters.

Results: Patients with recurrent NPs had pronounced pre-surgical levels of nasal 15(S)-HETE, PGD_2 and LTE_4 . From pre-surgery to 12-months after, NP recurrence was associated with significant decrease of 15(S)-HETE and PGD_2 relative to non-recurrence whereas levels of LTE_4 decreased at six-months but increased again at 12-months. Clustering revealed three potential endotypes. Cluster 1 and 3 featured high and low eicosanoid levels, respectively. Cluster 2 had higher levels of LTE_4 and PGD_2 , lower levels of PGE_2 and LTB_4 , and more cases of recurrent NPs and previous NP surgeries.

Conclusion: Elevated nasal LTE_4 , 12-month post-surgery, in NP recurrent subjects suggests that postoperative LTE_4 measurements may indicate rapid NP regrowth. A distinct nasal eicosanoid profile may be used for the identification of the most severe recalcitrant patients in need of targeted immunomodulatory therapies.

Keywords: Biomarker; Chronic Rhinosinusitis; Disease Severity; Eosinophilic rhinitis and nasal polyposis; Post-Operative.

Sci Rep

. 2023 May 8;13(1):7444.

doi: 10.1038/s41598-022-23543-9.

Unique inverse association between allergic rhinitis and periodontitis: a nationwide population-based study

Dae-Yeob Kim[1,2], Jae-Kwan Lee[3], Eun-Kyoung Pang[4], Seong-Ho Choi[5], Jong-Bin Lee[6]

Affiliations expand

- PMID: 37156820

- PMCID: PMC10167224

- DOI: 10.1038/s41598-022-23543-9

Free PMC article

Abstract

The increase in fine dust levels in the atmosphere has been associated with a growth in the incidence of environmental diseases, including allergic rhinitis (AR). Nasal obstruction caused by AR can impact the conditions in the oral cavity. The aim of this study was to determine the association between AR and periodontitis in the Republic of Korea. This study was based on data from the Seventh Korea National Health and Nutrition Examination Survey (KNHANES VII-1, 2016), which was conducted by the Korea Centers for Disease Control and Prevention. The study included 6129 adults older than 19 years. Sociodemographic information and medical variables including history of treatment of periodontitis (HTP) reflecting diagnosis of periodontitis and diagnosis of diseases such as AR were extracted from the data. HTP and AR were reported for 22.81 ± 0.84% (weighted percentage ± standard error) and 15.32 ± 0.63% of the studied population, respectively. A diagnosis of AR was reported for 11.07 ± 1.28% of those with HTP and for 17.55 ± 1.84% of those without HTP. From these, it was inferred that the prevalence of HTP was 1.536-fold higher in the non-AR group than in their counterparts with AR. Significant association was found between AR and HTP among those aged ≤ 64 years and the odds ratio (OR) of AR group for HTP was 0.62 (95% confidence interval:0.44-0.87; P = 0.0057). From this result, it can be inferred that patients diagnosed AR have lower risk of periodontitis.

Conflict of interest statement

The authors declare no competing interests.

- 42 references
- 1 figure

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

3

Int Forum Allergy Rhinol

. 2023 May 7.

doi: 10.1002/alr.23175. Online ahead of print.

Allergen exposure boosts peripheral Th9 responses in local allergic rhinitis patients

Francisca Palomares[1], Almudena Testera-Montes[1,2], Carlos Jose Aranda[1], Carmen Alba-Linero[1,3,4], Rocío Sáenz de Santa María-García[1,2], Guillermo Bentabol-Ramos[5], Cristobalina Mayorga[1,2], Maria Jose Torres[1,2,4], Carmen Rondon[1,2], Ibon Eguiluz-Gracia[1,2]

Affiliations expand

- PMID: 37150905

- DOI: 10.1002/alr.23175

No abstract available

Keywords: Allergens; Allergic rhinitis; Biomarker; Inhalation Allergen Challenge; Rhinitis; Therapeutics.

FULL TEXT LINKS

Proceed to details

Cite

JCI Insight
.
. 2023 May 8;8(9):e159058.
doi: 10.1172/jci.insight.159058.

MEX3B inhibits collagen production in eosinophilic nasal polyps by downregulating epithelial cell TGFBR3 mRNA stability

Jin-Xin Liu[1], Ao-Nan Chen[1], Qihong Yu[2,3], Ke-Tai Shi[1], Yi-Bo Liu[1], Cui-Lian Guo[1], Zhe-Zheng Wang[1], Yin Yao[1], Li Pan[1], Xiang Lu[1], Kai Xu[1], Heng Wang[1], Ming Zeng[1], Chaohong Liu[1,4], Robert P Schleimer[5,6], Ning Wu[1,7,8], Bo Liao[1], Zheng Liu[1]
Affiliations expand

- PMID: 36976645

- DOI: 10.1172/jci.insight.159058

Free article

Abstract

Although the expression of Mex3 RNA-binding family member B (MEX3B) is upregulated in human nasal epithelial cells (HNECs) predominately in the eosinophilic chronic rhinosinusitis (CRS) with nasal polyps (CRSwNP) subtype, its functions as an RNA binding protein in airway epithelial cells remain unknown. Here, we revealed the role of MEX3B based on different subtypes of CRS and demonstrated that MEX3B decreased the TGF-β receptor III (TGFBR3) mRNA level by binding to its 3' UTR and reducing its stability in HNECs. TGF-βR3 was found to be a TGF-β2-specific coreceptor in HNECs. Knocking down or overexpressing MEX3B promoted or inhibited TGF-β2-induced phosphorylation of SMAD2 in HNECs, respectively. TGF-βR3 and phosphorylated SMAD2 levels were downregulated in CRSwNP compared with controls and CRS without nasal polyps with a more prominent downregulation in the eosinophilic CRSwNP. TGF-β2 promoted collagen

production in HNECs. Collagen abundance decreased and edema scores increased in CRSwNP compared with control, again more prominently in the eosinophilic type. Collagen expression in eosinophilic CRSwNP was negatively correlated with MEX3B but positively correlated with TGF-βR3. These results suggest that MEX3B inhibits tissue fibrosis in eosinophilic CRSwNP by downregulating epithelial cell TGFBR3 expression; consequently, MEX3B might be a valuable therapeutic target against eosinophilic CRSwNP.

Keywords: Allergy; Collagens; Inflammation.

1
J Allergy Clin Immunol

. 2023 May 11;S0091-6749(23)00568-7.
doi: 10.1016/j.jaci.2023.04.017. Online ahead of print.

Identification of cough variant asthma phenotypes based on clinical and pathophysiological data

Wenzhi Zhan[1], Feng Wu[2], Yunhui Zhang[3], Lin Lin[4], Wen Li[5], Wei Luo[1], Fang Yi[1], Yuanrong Dai[6], Suyun Li[7], Jiangtao Lin[8], Yadong Yuan[9], Chen Qiu[10], Yong Jiang[11], Limin Zhao[12], Meihua Chen[13], Zhongmin Qiu[14], Ruchong Chen[1], Jiaxing Xie[1], Chunxing Guo[1], Mei Jiang[1], Xiaohong Yang[15], Guochao Shi[16], Dejun Sun[17], Rongchang Chen[18], Nanshan Zhong[1], Huahao Shen[5], Kefang Lai[19]
Affiliations expand

- PMID: 37178731

- DOI: 10.1016/j.jaci.2023.04.017

Abstract

Background: Cough variant asthma (CVA) may respond differently to anti-asthmatic treatment. There is limited data on the heterogeneity of CVA.

Objective: We aimed to classify patients with CVA using cluster analysis based on clinico-physiological parameters and to unveil the underlying molecular pathways of these phenotypes with transcriptomic data of sputum cells.

Methods: K-mean clustering was applied to 342 newly physician-diagnosed patients with CVA from a prospective, multicenter, observational cohort using 10 pre-specified baseline clinic-pathophysiological variables. The clusters were compared based on clinical features, treatment response and sputum transcriptomic data.

Results: Three stable CVA clusters were identified. Cluster 1 (n= 176) was characterized by female predominance, late-onset, normal lung function, and a low proportion of complete resolution of cough (60.8%) after anti-asthmatic treatment. Cluster 2 (n=105) presented with young, nocturnal cough, atopy, type 2-high inflammation, and a high proportion of complete resolution of cough (73.3%) with highly upregulated co-expression gene network that related to type 2 immunity. Cluster 3 (n= 61) had a high body mass index, long duration, family history of asthma, low lung function, and low proportion of complete resolution of cough (54.1%). Th17 immunity and type 2 immunity co-expression gene networks were both upregulated in clusters 1 and 3.

Conclusion: Three clusters of CVA were identified with different clinical, pathophysiological, and transcriptomic features and responses to anti-asthmatics treatment, which may improve our understanding of pathogenesis and develop individualized treatment of cough in asthma.

Keywords: airway inflammation; cluster; cough; cough variant asthma; transcriptome; treatment response.

Review

Neurosci Biobehav Rev

.
.
.
. 2023 May 10;105227.
doi: 10.1016/j.neubiorev.2023.105227. Online ahead of print.

Multiple Chemical Sensitivity: It's time to catch up to the science

John Molot[1], Margaret Sears[2], Hymie Anisman[3]
Affiliations expand

- PMID: 37172924

- DOI: 10.1016/j.neubiorev.2023.105227

Abstract

Multiple chemical sensitivity (MCS) is a complex medical condition associated with low dose chemical exposures. MCS is characterized by diverse features and common comorbidities, including fibromyalgia, cough hypersensitivity, asthma, and migraine, and stress/anxiety, with which the syndrome shares numerous neurobiological processes and altered functioning within diverse brain regions. Predictive factors linked to MCS comprise genetic influences, gene-environment interactions, oxidative stress, systemic inflammation, cell dysfunction, and psychosocial influences. The development of MCS may be attributed to the sensitization of transient receptor potential (TRP) receptors, notably TRPV1 and TRPA1. Capsaicin inhalation challenge studies demonstrated that TRPV1 sensitization is manifested in MCS, and functional brain imaging studies revealed that TRPV1 and TRPA1 agonists promote brain-region specific neuronal variations. Unfortunately, MCS has often been inappropriately viewed as stemming exclusively from psychological disturbances, which has fostered patients being stigmatized and ostracized, and often being denied accommodation for their disability. Evidence-based education is essential to provide appropriate support and advocacy. Greater recognition of receptor-mediated biological mechanisms should be incorporated in laws, and regulation of environmental exposures.

Keywords: TRPA1 receptors; TRPV1 receptors; asthma; chronic migraine; multiple chemical sensitivity.

Medicine (Baltimore)

. 2023 May 12;102(19):e33787.
doi: 10.1097/MD.0000000000033787.

Lung abscess with chronic cough secondary to xanthogranulomatous pyelonephritis: A rare case report

Pai-Yu Cheng[1,2], Yi-You Huang[1], Fu-Shan Jaw[1], Shiu-Dong Chung[2,3,4]
Affiliations expand

- PMID: 37171318

- DOI: 10.1097/MD.0000000000033787

Abstract

Rationale: Xanthogranulomatous pyelonephritis (XGPN) is a form of chronic pyelonephritis caused by chronic calculus obstruction and bacterial infection, leading to the destruction of the renal parenchyma and calyces. Conservative treatment is usually not sufficient, and surgical intervention is still the main curative approach. XGPN with transdiaphragmatic extension and lung abscess formation is a rare condition.

Patient concerns: We report a 64-year-old woman who presented with persistent productive cough.

Diagnoses: Lung abscess secondary to XPGN. Both nephrostomy urine and sputum cultures showed Proteus mirabilis infection with the same antibiotic sensitivity spectrum, but blood culture was negative.

Interventions: Laparoscopic radical nephrectomy and prolonged antibiotic treatment.

Outcomes: The lung abscess and cough gradually resolved in 1 month after nephrectomy.

Conclusion: Lung abscess secondary to transdiaphragmatic extension of XGPN is rare but should be considered in patients with lower lung infections that are unresponsive to treatment, especially infections due to unusual respiratory pathogens such as P mirabilis.

Conflict of interest statement

The authors have no funding and conflicts of interest to disclose.

- 15 references

4

Laryngoscope

. 2023 May 11.
doi: 10.1002/lary.30739. Online ahead of print.

The Efficacy of Superior Laryngeal Nerve Block for Neurogenic Cough: A Placebo-Controlled Trial

Courtney B Tipton[1], Rameen Walters[1], Rachana Gudipudi[1], Drasti Smyre[1], Shaun Nguyen[1], Ashli K O'Rourke[1]
Affiliations expand

- PMID: 37166167

- DOI: 10.1002/lary.30739

Abstract

Objectives: Chronic cough is a common and debilitating problem. The objective of this study is to assess the efficacy and safety of superior laryngeal nerve (SLN) block for neurogenic cough through a placebo-controlled, prospective trial.

Methods: Patients were recruited in an outpatient tertiary care center. Inclusion criteria included a history consistent with neurogenic cough and age ≥ 18. Exclusion criteria included patients with untreated other etiologies of chronic cough (i.e., uncontrolled reflux) and current neuromodulating medication use. Patients were randomized into the treatment (1-2 mL of a 1:1 triamcinolone 40 mg: 1% lidocaine with 1:200,000 epinephrines) or placebo (saline) group and received two unilateral injections at approximately 2-week intervals. Outcomes were measured primarily by the Leicester Cough Questionnaire (LCQ) and a patient symptom log including a visual analog scale of cough severity.

Results: 17 patients completed the study, including 10 in the treatment group and seven in the placebo group. Eight (80%) patients in the treatment group reported improvement with at least one of the injections, whereas only 1 (14.3%) patient reported improvement in the placebo group ($p < 0.0001$). Average total LCQ scores increased in the treatment group from 10.09 to 13.15 ($p = 0.03$), with the most change occurring in the social domain. There was no statistically significant change in LCQ scores for the placebo group. There were no serious adverse events.

Conclusion: An SLN block is a safe and efficacious procedure for the treatment of neurogenic cough. Further studies are needed to optimize treatment protocol and assess long-term follow-up of patient outcomes.

Level of evidence: 2 Laryngoscope, 2023.

Keywords: cough; superior laryngeal nerve block.

- 26 references

Eur J Intern Med

. 2023 May 9;S0953-6205(23)00154-1.

doi: 10.1016/j.ejim.2023.05.008. Online ahead of print.

Chronic cough in very old patients on long-term therapy with angiotensin converting enzyme inhibitors and new-onset cancer

Antonella Gallo[1], Maria Grazia Massaro[2], Sara Camilli[2], Elena Verrecchia[2], Massimo Montalto[3]

Affiliations expand

- PMID: 37164886

- DOI: 10.1016/j.ejim.2023.05.008

No abstract available

Keywords: Angiotensin converting enzyme inhibitors (ACEi); Cancer bradykinin; Chronic cough; Elderly.

Conflict of interest statement

Declaration of Competing Interest The authors have no conflict of interest relating to this study.

Lung

. 2023 May 9;1-12.

doi: 10.1007/s00408-023-00620-y. Online ahead of print.

Characteristics and Management of Patients with Refractory or Unexplained Chronic Cough in Outpatient Hospital Clinics in Spain: A Retrospective Multicenter Study

Ignacio Dávila[1], Luis Puente[2], Santiago Quirce[3], Ebymar Arismendi[4], Miguel Díaz-Palacios[5], Antonio Pereira-Vega[6], Alfredo de Diego[7], Juan Luis Rodriguez-Hermosa[8], Luis Cea-Calvo[9], Marta Sánchez-Jareño[10], Pilar López-Cotarelo[10], Christian Domingo[11]

Affiliations expand

- PMID: 37160771

- PMCID: PMC10169201

- DOI: 10.1007/s00408-023-00620-y

Free PMC article

Abstract

Purpose: Chronic cough (cough that persists for ≥ 8 weeks) can cause a range of physical symptoms and psychosocial effects that significantly impair patients' quality of life. Refractory chronic cough (RCC) and unexplained chronic cough (UCC) are challenging to diagnose and manage, with substantial economic implications for healthcare systems.

Methods: This retrospective multicenter non-interventional study aimed to characterize the profile and health resource consumption of patients with RCC or UCC who attended outpatient clinics at Spanish hospitals. Data were collected from medical records of patients with RCC or UCC for up to 3 years before study inclusion.

Results: The patient cohort (n = 196) was representative of the chronic cough population (77.6% female, mean age 58.5 years). Two-thirds of patients (n = 126) had RCC. The most frequently visited doctors were pulmonologists (93.4% of patients) and primary care physicians (78.6%), with a mean of 5 visits per patient over three years' observation. The most common diagnostic tests were chest x-ray (83.7%) and spirometry with bronchodilation (77.0%). The most commonly prescribed treatments were proton pump inhibitors (79.6%) and respiratory medications (87.8%). Antibiotics were prescribed empirically to 56 (28.6%) patients. Differences between RCC or UCC groups related mainly to approaches used to manage cough-associated conditions (gastroesophageal reflux disease, asthma) in patients with RCC.

Conclusion: RCC and UCC are responsible for high health resource utilization in Spanish hospitals. Specific treatments targeting the pathological processes driving chronic cough may provide opportunities to reduce the associated burden for patients and healthcare systems.

Keywords: Health resource utilization; Noninterventional study; Refractory chronic cough; Spain; Unexplained chronic cough.

Conflict of interest statement

Ignacio Dávila: Consulting fees from Allergy Therapeutics, AstraZeneca, GSK, MSD, Novartis, and Sanofi. Lectures for Allergy Therapeutics, AstraZeneca, Chiesi, Diater, GSK, LETI, Novartis, and Sanofi. Grants to institution from ISCIII, Junta de Castilla de León, and Thermofisher. Luis Puente: No conflict of interest declared. Santiago Quirce has received speaking, lecture and consulting fees from Allergy Therapeutics, AstraZeneca, GSK, Mundipharma, Novartis, Sanofi, and Teva. Ebymar Arismendi: No conflict of interest declared. Miguel Díaz-Palacios: No conflict of interest declared. Antonio Pereira-Vega: No conflict of interest declared. Alfredo de Diego: No conflict of interest declared. Juan Luis Rodríguez-Hermosa: Consulting fees from Bial and Grifols; payments for lectures including

service on speakers' bureaus from Boehringer, Grifols, GSK, and Zambon. Christian Domingo-Ribas: No conflict of interest declared. Luis Cea-Calvo, Marta Sánchez-Jareño and Pilar López-Cotarelo are full-time employees at MSD, Spain.

- 26 references
- 2 figures

7

Ann Am Thorac Soc

. 2023 May 9.

doi: 10.1513/AnnalsATS.202302-174OC. Online ahead of print.

The Burden and Impact of Cough in Patients with Idiopathic Pulmonary Fibrosis: An Analysis of the Prospective Observational PROFILE Study

Peter Saunders[1,2], Zhe Wu[3,4], William A Fahy[4], Iain D Stewart[5], Gauri Saini[6], David J F Smith[1,4], Rebecca Braybrooke[7], Carmel Stock[1], Elisabetta A Renzoni[8,4], Simon R Johnson[7], R Gisli Jenkins[5,4], Maria G Belvisi[8,9], Jaclyn A Smith[10,11], Toby M Maher[8,12], Philip L Molyneaux[1,13]

Affiliations expand

- PMID: 37159951

- DOI: 10.1513/AnnalsATS.202302-174OC

Abstract

Rationale: Cough is a commonly reported symptom in idiopathic pulmonary fibrosis (IPF) that negatively impacts patient-reported quality of life. However, both the burden of cough at diagnosis and the behaviour of cough over time have not been systematically described in patients with IPF.

Objectives: By utilising data prospectively collected as part of the PROFILE study we sought to assess cough burden and the impact that this has on quality of life within a cohort of patients with newly diagnosed IPF. We also re-examined the previously described relationship between cough and mortality and the association of cough with the MUC5B promoter polymorphism.

Methods: The PROFILE study is a multicentre, prospective, observational, longitudinal cohort study of incident IPF. Leicester cough questionnaire (LCQ) scores were recorded at baseline in 632 subjects and then repeated 6 monthly in a subset (n=216) of the cohort.

Results: The median LCQ at diagnosis was 16.1 (inter-quartile range 6.5). LCQ scores remained stable over the subsequent year in the majority of patients. There was a weak association between LCQ score and baseline lung function with worse cough related quality of life associating with more severe physiological impairment. Cough scores were not associated with subsequent mortality after correcting for baseline lung function. Furthermore, there was no relationship between LCQ score and MUC5B promotor polymorphism status.

Conclusion: The burden of cough in IPF is high. Although cough is weakly associated with disease severity at baseline, cough-specific QoL as measured by the LCQ, confers no prognostic value. Cough-specific QoL burden remains relatively stable over time and does not associate with MUC5B promotor polymorphism.

Curr Opin Pulm Med

. 2023 May 10.

doi: 10.1097/MCP.0000000000000968. Online ahead of print.

Telemedicine and remote monitoring in cystic fibrosis

Claire Edmondson[1], Noah Lechtzin[2]
Affiliations expand

- PMID: 37158652

- DOI: 10.1097/MCP.0000000000000968

Abstract

Purpose of review: Guidelines for cystic fibrosis (CF) care recommend multidisciplinary teams see patients at least quarterly with frequent measurement of spirometry and collection of respiratory cultures. This can be burdensome for people with CF, particularly if they live far from a specialized care center. This has led to an interest in telehealth coupled with remote monitoring. We review the recent literature on these topics for people with CF.

Recent findings: The COVID-19 pandemic accelerated a move toward remote delivery of CF care and multiple recent publications have reported on the feasibility of telehealth, remote spirometry, remote collection of respiratory cultures, adherence monitoring, cough assessment, symptom monitoring and activity tracking. Useful data can be obtained and both clinicians and patients have favorable opinions about remote delivery of healthcare, though the impact on clinical outcomes is not yet known.

Summary: Telehealth and remote monitoring for people with CF is feasible and has grown in use, though it is too early to know how prominently these approaches will fit into routine care for CF.

- 56 references

Lung
.
. 2023 May 8.
doi: 10.1007/s00408-023-00622-w. Online ahead of print.

Cough Sensitivity to Several External Triggers is Associated with Multiple Non-respiratory Symptoms

Heikki O Koskela[1,2], Johanna T Kaulamo[3], Anne M Lätti[4]
Affiliations expand

- PMID: 37156984

- DOI: 10.1007/s00408-023-00622-w

Abstract

Purpose: Enhanced responsiveness to external triggers is thought to reflect hypersensitivity of the cough reflex. It may involve an enhanced sensitivity of the afferent nerves in the airways and/or an abnormal processing of the afferent information by the central nervous system (CNS). The CNS processing of cough has been shown to involve the same regions as those in symptom amplification, a phenomenon that often manifests as multiple symptoms. The main purpose of the present study was to define whether the presence of several cough triggers is associated with multiple symptoms.

Methods: 2131 subjects with current cough responding to two email surveys filled in a comprehensive questionnaire about social background, lifestyle, general health, doctors' diagnoses and visits, symptoms, and medication. Multiple symptoms was defined as three or more non-respiratory, non-mental symptoms.

Results: A carefully controlled multiple regression analysis revealed that the number of cough triggers was the only cough characteristic associating with multiple non-respiratory, non-mental symptoms [aOR 1.15 (1.12-1.19) per one trigger, $p < 0.001$]. Among the 268 subjects with current cough both in the first survey and in the follow-up survey 12 months later, the repeatability of the trigger sum was good with an intraclass correlation coefficient of 0.80 (0.75-0.84).

Conclusion: The association between the number of the cough triggers and multiple symptoms suggests that the CNS component of cough hypersensitivity may be a manifestation of non-specific alteration in the CNS interpretation of various body sensations. The number of cough triggers is a repeatable measure of cough sensitivity.

Keywords: Central nervous system sensitization; Chronic cough; Cough; Cough hypersensitivity; Cough reflex; Somatoform disorders.

- 33 references

"bronchiectasis"[MeSH Terms] OR bronchiectasis[Text Word]

1
Medicine (Baltimore)

-
-
-

. 2023 May 12;102(19):e33716.
doi: 10.1097/MD.0000000000033716.

Treatment adherence and anxiety levels of bronchiectasis patients in the COVID-19 pandemic

Sermin Borekci[1], Ilgim Vardaloglu[1], Nejdiye Gungordu[1], Buket Caliskaner Ozturk[1], Hazal Cansu Culpan[2], Cana Aksoy Poyraz[3], Bilun Gemicioglu[1]
Affiliations expand

- PMID: 37171358

- PMCID: PMC10173943

- DOI: 10.1097/MD.0000000000033716

Abstract

It has been reported that during the coronavirus disease-2019 (COVID-19) pandemic, bronchiectasis patients were adversely affected due to their limited respiratory functions and acute exacerbations which were triggered by viral infections. The increased concern in the population during the pandemic has affected the attitudes of people toward avoiding disease and patients' treatment compliance. It is unclear whether treatment adherence and anxiety levels of bronchiectasis patients have changed during the pandemic. We aimed to evaluate treatment adherence and anxiety levels in patients with bronchiectasis. A cross-sectional survey was conducted between May and November 2021. A total of 123 patients with bronchiectasis and 110 adults without chronic diseases were included in the control group. Patient demographic information, bronchiectasis follow-up data, and COVID-19 history were recorded. Then, patients filled out "MARS-5 Index" (Medical Adherence Report Scale-5), Beck Anxiety Scale and the Effect of Events Scale (IES-R). Responses of questionnaires were statistically analyzed. Our results showed that the majority of patients with bronchiectasis had high Medical Adherence Report Scale-5 index total scores during the COVID-19 pandemic (86.2%). The total scores on the Beck Anxiety Scale of bronchiectasis patients who did not have COVID-19 were significantly higher than those who had COVID-19 ($P = .04$). The total scores on the IES-R were found to be significantly higher in the control group ($P < .001$). No significant difference was found in the total scores on the Beck Anxiety Scale between the patients and the control group. The bronchiectasis patients had high adherence to their current treatment during the COVID-19 period and were less affected by the pandemic and its psychological effects compared to the healthy population. Furthermore, individuals diagnosed with bronchiectasis who were not infected with COVID-19 demonstrated increased levels of anxiety compared to those who were infected with COVID-19 which may be due to their concern about contracting the disease.

Conflict of interest statement

The authors have no funding and conflicts of interest to disclose.

- 19 references

Editorial

Pediatr Pulmonol

. 2023 May 12.
doi: 10.1002/ppul.26467. Online ahead of print.

World Bronchiectasis Day: It is time for global action to promote equity of care

Oleksandr Mazulov[1], Zena Powell[2], Ed Powell[2], Andrew Bush[3], Anne B Chang[4,5], Ahmad Kantar[6], Keith Grimwood[7,8], Bulent Karadag[9]; Child-BEAR-Net*
Affiliations expand

- PMID: 37171114

- DOI: 10.1002/ppul.26467

No abstract available

Keywords: QoL; bronchiectasis; children; cystic fibrosis.

- 16 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Review

Tuberc Respir Dis (Seoul)

. 2023 May 10.
doi: 10.4046/trd.2023.0010. Online ahead of print.

Exacerbation Prevention and Management of Bronchiectasis

Joon Young Choi[1]
Affiliations expand

- PMID: 37165624

- DOI: 10.4046/trd.2023.0010

Free article

Abstract

Bronchiectasis is characterized by irreversibly damaged and dilated bronchi, which causes significant symptoms, poor quality of life, increased economic burden and mortality rates. Despite increasing prevalence and clinical significance of bronchiectasis, bronchiectasis was previously regarded as an orphan disease, and ideal treatment of this disease have been poorly understood. European Respiratory Society and British Thoracic Society have recently published guidelines to assist physicians in the clinical field. Guidelines and reports suggest comprehensive management including both non-pharmacological and pharmacological treatments. Physiotherapy and pulmonary rehabilitation are one of the most important non-pharmacologic therapies in bronchiectasis patients; long-term inhaled antibiotics and macrolide therapy have gained significant evidences in reducing exacerbation risk in frequent exacerbators. In this review, we summarized recent update on bronchiectasis treatment to prevent exacerbation and management of clinical deteriorations.

Keywords: Airway clearance therapy; Bronchiectasis; Exacerbation; Inhaled antibiotics; Macrolide; Physiotherapy; Treatment.

Review

Expert Opin Pharmacother

. 2023 May 9;1-15.
doi: 10.1080/14656566.2023.2210763. Online ahead of print.

Advances in pharmacotherapy for bronchiectasis in adults

Xiao-Xian Zhang[1], Zhao-Ming Chen[1], Zhen-Feng He[1], Wei-Jie Guan[1,2,3]
Affiliations expand

- PMID: 37161410

- DOI: 10.1080/14656566.2023.2210763

Abstract

Introduction: Bronchiectasis has become a growing concern of chronic airway disease because of the enormous socioeconomic burden. Four cardinal interdependent components - impaired airway defense, recurrent airway infections, inflammatory response, and airway damage, in conjunction with the underlying etiology, have collectively played a role in modulating the vicious vortex of the pathogenesis and progression of

bronchiectasis. Current pharmacotherapy aims to target at these aspects to break the vicious vortex.

Areas covered: The authors retrieve and review, in MEDLINE, Web of Science and ClinicalTrials.gov registry, the studies about pharmacotherapy for bronchiectasis from these aspects: antibiotics, mucoactive medications, bronchodilators, anti-inflammatory drug, and etiological treatment.

Expert opinion: Future drug development and clinical trials of bronchiectasis need to pay more attention to the different phenotypes or endotypes of bronchiectasis. There is a need for the development of novel inhaled antibiotics that could reduce bacterial loads, improve quality-of-life, and decrease exacerbation risks. More efforts are needed to explore the next-generation neutrophil-targeted therapeutic drugs that are expected to ameliorate respiratory symptom burden, reduce exacerbation risks, and hinder airway destruction in bronchiectasis.

Keywords: Bronchiectasis; exacerbation; inhaled antibiotics; neutrophil inflammation; pharmacotherapy.

Curr Med Imaging

. 2023 May 8.

doi: 10.2174/1573405620666230508103841. Online ahead of print.

Computer Tomography (CT)-based Screening of Hospitalized Patients with Moderate to Severe Chronic Obstructive

Pulmonary Disease Complicated by Bronchiectasis Phenotype During Acute Exacerbation: A Clinical Analysis

Jingmei Zhao[1], Yiping Wu[1], Kai Zhang[2], Hongfeng Zhang[1], Hongbo Ren[1], Yonghong Wang[1]
Affiliations expand

- PMID: 37157216

- DOI: 10.2174/1573405620666230508103841

Abstract

Background: In the past, many experts considered chronic obstructive pulmonary disease (COPD) and bronchiectasis to be separate, chronic respiratory diseases. Nonetheless, the widespread use of high-resolution lung computed tomography (CT) has led to the discovery that these diseases can occur alone or together.

Aim: The current study aimed to compare the effects of nutritional status on the clinical outcomes in moderate to severe COPD patients with bronchiectasis.

Objective: This study identifies the nutritional risk in hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during acute exacerbation screened using computer tomography (CT). Also, determines its correlation with disease progression.

Materials and methods: NRS 2002 (Nutrition Risk Screening Evaluation Tool) was used to determine and evaluate the nutritional risk status in 182 hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during an acute exacerbation. Selected patients were divided into the nutritional risk (NR) group and the non-nutritional risk (NNR) group according to their nutritional status determined by NRS 2002. The body mass index (BMI), serum albumin (ALB), pre albumin (PAB), lymphocyte count (TLC), FEV1/FVC, FEV1% predicted, PEF% predicted, blood gas analysis, number of acute exacerbations in the past year, number of respiratory failure cases, number of anti-infection days, and length of hospitalization of the two groups were observed.

Results: The hospitalized patients in acute exacerbation of moderate to severe COPD complicated by bronchiectasis phenotype had a nutritional risk of 62.64%. BMI, ALB, PAB, TLC, FEV1% predicted, FEV1/FVC, PEF% predicted, blood gas analysis, number of acute

exacerbations in the past year, number of respiratory failure cases, number of anti-infection days, and length of hospitalization were statistically significantly different between the NR group and NNR group ($P<0.05$).

Conclusion: Hospitalized patients with moderate to severe COPD complicated by bronchiectasis phenotype during acute exacerbation are often associated with nutritional risk. An increase in nutritional risk reduces the level of pulmonary function of the patient and elevates the risk for repeated acute exacerbations, which predispose the patient to respiratory failure, thereby increasing the length of hospitalization. Therefore, the nutritional risk status of COPD patients with bronchiectasis was closely related to the occurrence, development, and prognosis of the disease.

Keywords: Computer tomography (CT); acute exacerbation; chronic obstructive pulmonary disease; nutritional risk screening.